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RUBBER PRICE CONDITIONS.

THE topic of the utmost interest in the india-rubber industry to-day, and that which is most considered, is the present and prospective price of crude rubber. Whether the manufacturer be located at Malden, Manchester, Mannheim, Melbourne, Menin, Milan, Mjondalen, Montargis, Montreal, or Moscow, the question is ever present, as one which must be taken into account in planning every detail for the future. This is a fact which makes the whole rubber industry akin, for the price of rubber everywhere at any moment practically is the same, while the same uncertainty exists as to what the price may be to-morrow. The producers of rubber and the traders in rubber have troubles of their own in relation to the same subject, but here we shall treat more particularly of the manufacturers. Where rubber prices are made, or how they are made, are questions not now pertinent to our purpose. The uncertainty of prices is the thing, and what the consumer of rubber can do about it.

Low priced rubber is not so essential. When every consumer of a given grade of rubber must buy it practically from the same source, and it costs them all precisely the same figure, they are all on the same footing.

Whether the cost is 50 cents or \$1 a pound, or more, would be immaterial—if permanent prices could be counted upon. But they cannot. The average price at New York of fine upriver Pará rubber during the year 1902 was 76 cents; during 1905 it was \$1.28½; since then it has been less, the figure for 1908 declining to 93¼ cents. This year, so far, the price for this grade has kept in the neighborhood of \$1.20. When it is considered that the difference between the highest and lowest year prices here quoted amounts to no less than \$1,157.42 cents per metrical ton, and that these fluctuations usually occur without warning, the buying of raw rubber by consumers approaches almost a speculative basis.

The producers of rubber in the Amazon region, far from satisfied with a condition under which they have no say in fixing the market price of their produce, have determined upon a course of action, in which, with the help of the government and of a great bank, they mean to hold their rubber whenever prices are not high enough to be attractive. Now the holding of rubber anywhere is an expensive practice, when storage costs are considered, insurance, interest on advances—and the inevitable shrinkage in weight. It is well enough to speak of rubber as being a modern necessity, but there are limits to what people will pay even for necessities, and manufacturers would have to halt somewhere in the matter of paying advancing rates on rubber, even were the Amazon region the world's only source. There would be an inevitable check to rising prices, due to increased production and the hesitation of consumers to buy, after which the banks would have to unload, with such results as followed Vianna's state aided rubber "corner"—a fall to half the former prices and loss to everybody concerned.

THE INDIA RUBBER WORLD, a dozen years ago, printed an article on "What Vianna Did for African Rubbers," showing that his speculative "bearing" of the market for Pará rubber opened the way largely for the increased use of African grades. Nowadays, African rubbers having won an established position in the industry, though now apparently falling off in the rate of production, an important new source of supplies has been developed—the Eastern plantations, the product of which (*Hevea*) is better calculated than even the best Africans for supplanting the Amazon rubber in the industry.

Without meaning to advise our friends on the Amazon, it would seem that their best interest lies, not in forcing up prices to an artificial level, but to so improving their business methods as to enable them to sell at a profit at even lower prices than at present. Their devotion to any policy gives the planters of Ceylon and Malaya, backed by unlimited European capital, the very encouragement which they want and most need. The Eastern planters have it in their power

to appeal strongly to the consuming markets in the matter of guaranteeing prices for longer periods than have ever been known in the trade before, and we shall be surprised if this does not strengthen the demand for their product.

STILL WAITING FOR THE NEW TARIFF.

THE consideration of the tariff at Washington continues to receive attention in these pages for the reason that, whether or not such things should be, business of all kinds seems to become less active whenever the nation's legislators happen to be dealing with the rates of duties on imports. Specifically, the duties on imported manufactures of india-rubber do not seem likely to be changed much, if at all, but there are other branches of trade which may be affected to a greater extent, and the rubber industry is so closely dependent upon some of these that its leaders are waiting, with everybody else, for the announcement of the new tariff schedules before a resumption of business activity on normal lines.

Without doubt the pending tariff bill will become law very shortly, with net results differing slightly from the results from the existing law, under which the United States have enjoyed unexampled prosperity. Meanwhile the farmers are planting large crops, manufacturers are in readiness to produce wares of many kinds, and merchants are selling goods. Everything is in readiness for business on a large scale, but for the tariff bugaboo, which with the progress of time becomes less terrible, as the expansion of the country's manifold interests leads the people less and less to single out the tariff for consideration as a public question. To-day nearly half of the imports into the United States are entered free, and the duties on the remainder are imposed with a view to the most equitable distribution of burdens upon the taxpayers. But in the nature of things there can never be general agreement as to how duties should be assessed, what with importers and domestic producers to be considered, writers and speakers of every class, from the practical business man to the *doctrinaire* (not to say crank), and 483 members of the Congress, representing so many and such diverse constituencies. The same difficulty has been experienced for 120 years, however—since the date of the first American tariff law; yet the Congress has always managed to frame up a tariff bill under which the nation prospered, and, after all, each succeeding new schedule has differed from its predecessors much less than is generally supposed.

For several years past the income from the customs has averaged about \$284,000,000, and the average internal revenue of the federal government is \$245,000,000. The total volume of imports is small as compared with the amount of domestic production and consumption, and it is with the latter which the average citizen

mostly has to do. For the greater part, the india-rubber trade is little concerned, except the representatives in America of foreign manufacturers. Since 1846 the duty of imported rubber goods has been 30 per cent or thereabouts, but this does not wholly check the buying here of foreign goods. At the same time, if there were no duties we don't believe that American rubber manufacturers would go out of business. Moreover, we don't believe that a single consumer can figure out how much, or whether at all, the prices of his purchases of rubber are affected by the tariff.

We shall be pleased when the tariff talk is ended and people begin to devote their attention to more important matters.

INDUSTRIAL SLANG.

"TO rubber," "gum shoeing," "rubber necks"—are slang words and phrases still potent and amusing to the masses, but a bit of a bore to members of the great industry from which they were cribbed. Their permanence, particularly "Rubber," meaning to turn and stare after some passing object, illustrates the power that slang has in language building. Of the thousands of slang words coined, most perish after a time, but others are so apt and vital that they become an integral part of the written language to which they attach themselves. The slang word "rubber" appears to be permanent, more's the pity. It is therefore fortunate that the dignified and euphonic term "India-rubber," to which the *litterateurs* and the scholars of the world have been for years committed, is not adapted to the use of the iconoclastic slang-founder. Perhaps as a name for the most remarkable of nature's products it is not quite ideal. If La Condamine, or any one of the earlier investigators had called it "Resilion" or "Multigum," or had coined some other descriptive name that would be acceptable to all languages, it would have been well. At the same time, India-rubber, with its suggestion of the aboriginal discoverers in the Americas, as well as its first industrial use in Europe, is more than usually apt and satisfactory.

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of values of exports of manufactures of india-rubber and gutta-percha for the month of February, 1909, and of the first eight months of five fiscal years, beginning July 1:

MONTHS.	Belting, Packing and Hose.	Boots and Shoes.	All Other Rubber.	TOTAL.
February, 1909 ...	\$93,295	\$54,873	\$366,183	\$514,351
July-January	803,067	958,671	2,088,524	3,850,262
Total	\$896,362	\$1,013,544	\$2,454,707	\$4,364,613
Total, 1907-08 ...	924,585	1,305,352	2,485,307	4,715,244
Total, 1906-07 ...	801,238	918,569	2,321,211	4,041,018
Total, 1905-06 ...	834,554	1,303,164	1,836,312	3,974,030
Total, 1904-05 ...	591,309	1,018,122	1,541,217	3,150,648

CEYLON RUBBER SALE CONTRACTS.

LATER details are available in regard to the Ceylon rubber crop contracts mentioned in THE INDIA RUBBER WORLD, April 1, 1909 (page 268.) Up to date 18 Ceylon companies are mentioned as having contracted for the delivery of their 1909 product (other than scrap) to local merchants, at a fixed price. With one exception this price is 3.70 rupees [= \$1.20 gold] per pound, and the rate named for the remaining company is 3.10 rupees [= \$1]. Since the public announcement of these contracts rubber has changed hands at Colombo at 3.80 rupees [= \$1.23 $\frac{1}{4}$] for biscuits and sheet, with 3.85 rupees quoted for fine white crepe. The companies mentioned as having sold rubber under the new system are local or "rupee" companies, as distinguished from the companies capitalized in sterling money and registered in London and Edinburgh. The English companies not unnaturally ship their product to London, and the few planting companies in the Far East financed in Belgium are shipping to the Antwerp market.

The local Ceylon companies have been financed to a certain extent by the leading commercial houses of Colombo, and are under no obligation to send their rubber to the markets here mentioned. We quote from the *Ceylon Observer*: "It is interesting to learn that nearly all these contract purchases of 1909 crops in Colombo have been made by one firm on behalf of the American market. Rumor speaks of a coming expenditure of £4,000 sterling [= \$19,466] weekly in these purchases for New York. In any case a firm market throughout the year—and appreciably rising—is the obvious expectation on the part of big manufacturers in the United States."

Color is lent to the *Ceylon Observer's* report by the arrivals at New York of plantation rubber direct from Ceylon, all of which, to date, has been received by a single firm, the total amount for the first three months of the year, according to the statistics of arrivals printed in THE INDIA RUBBER WORLD, reaching over 100,000 pounds. The total arrivals at New York of plantation "Pará," for this period, according to the same tables, including shipments via London, reached 404,000 pounds, of which 93 per cent. was consigned to three firms.

The following companies and estates are mentioned as having sold their rubber under contract this year, the figures indicating the estimated production of the required grades. For the most part these companies are not yet large producers, but they have planted extensively and have in prospect a constantly increasing product:

*Seremban Estate Rubber Co., Limited.....	pounds 120,000
Vogan Tea Co. of Ceylon, Limited.....	67,000
Grand Central Ceylon Rubber Co., Limited.....	60,000
Beverlac (Selangor) Rubber Co., Limited.....	50,000
*Pendamaran Estate.....	45,000
Pallagodda Estate [Kalutara Co., Limited].....	30,000
*Blackwater Estate (Klang) Rubber Co., Limited.....	20,000
*Ribu Rubber Co., Limited.....	20,000
*Neboda Tea Co. of Ceylon, Limited.....	17,000
Clyde Tea Estates Co., Limited.....	15,000
Perth Estate [Ceylon Tea and Coconut Estates Co., Limited].....	12,000
Hanwella Tea and Rubber Co., Limited.....	10,000
The Lanka Rubber Co., Limited.....	10,000
Rayigam Co., Limited.....	9,000
Yatiantota Ceylon Tea Co., Limited.....	8,000
Panawatte Tea and Rubber Estates, Limited.....	6,000
The Kelani Tea Garden Co., Limited.....	6,000
*Kempsey estate.....	4,000

Total 509,000
[*Ceylon companies with estates in Malaya.]

At the half-yearly meeting of the Ceylon Chamber of Commerce (Colombo, February 26) the formal report that was presented gave the details of exports of plantation rubber for 1908 [see THE INDIA RUBBER WORLD, April 1, 1909—page 272] and commented upon the general improvement in the quality of the rubber exports, now that production is on a larger scale. The

report says: "The best buyer on the local market has been the United States, but foreign countries [Note that America is not included in "foreign."—THE EDITOR] and Australia are interesting themselves in the product, though so far they have not been in so favorable a position to compete with the former; they should, however, in the future be strong competitors. Prices for good biscuit and sheet rubber ranged during the six months from 2.80 rupees [= 90.8 cents] to 3.90 rupees [= \$1.26 $\frac{1}{4}$] per pound, and the lower grades rose proportionally, and all rubber offered was eagerly taken up by local [Colombo] buyers."

* * *

MR. ALEXANDER BETHUNE, the London correspondent of the *Times of Ceylon*, writes to his paper: "A member of one of the largest firms of American rubber dealers has been in London and has been expressing himself in the most favorable terms as to the prospects of business in the United States. He says that hitherto the exports of Plantation have been so small that many American buyers have neglected the article, but that this is rapidly changing, and he himself fully realizes that in time the export will be as large as the present figures for Pará."

A statement in a recent issue of *The India-Rubber Journal* was to the effect that London rubber producing companies were being systematically canvassed by a New York importing firm, with a view to shipments being made to America direct from estates.

PROPOSED PATENT LEGISLATION.

WIDESPREAD interest is maintained in the operations and effects of the new British patent law, which went into effect in 1908. One of its provisions was designed to confine to British territory the manufacture of articles patented in that country, no matter what the residence of the patentee. Retaliatory measures have been proposed in several other countries [see THE INDIA RUBBER WORLD, March 1, 1909—page 201] including the United States. The latest proposed action of this kind forms part of what is known as the Payne bill—"to provide revenue, equalize duties, and encourage the industries of the United States, and for other purposes"—now pending before the congress at Washington. One section in this bill follows:

SEC. 41. That whenever a patent is issued by the United States to any citizen or subject of a foreign country it shall be subject with respect to manufacture thereunder in this country to all the limitations, conditions, and restrictions that are imposed by the country of said citizen or subject upon the manufacture in that country under patents issued therein to citizens of the United States.

It does not appear as yet that Great Britain has realized any advantage from her new patent law in the matter of transferring to that country any important industry previously established elsewhere. Nor have any notable patents been revoked by reason of non-compliance with the new requirements. There is a liberal time limit, however, as to the establishment in England of works for the manufacture of foreign inventions patented there, and after all some discretion is permitted to the comptroller general as to the revocation of any particular patent.

Whatever may be true of other fields of invention, it is noticeable that fewer patents relating to the rubber industry have been granted by Great Britain to American inventors during the past year than during some years preceding, although American inventors have been as active as usual in applying for patents at home in respect of rubber and its applications.

THE directors of Galvez Rubber Estates, Limited [see THE INDIA RUBBER WORLD, August 1, 1907—pages 335], have issued a report to March 31, 1908, stating that the principal work undertaken during the period under review had been in the nature of organization and development. In addition to the three estates acquired originally, another small one has been purchased. It is stated that up to October 31, 1908, 138,000 pounds of rubber was gathered, of which 39,971 pounds had been sold at last account, and the balance was being forwarded.

The Editor's Book Table.

NOTES OF A BOTANIST ON THE AMAZON AND ANDES. . . .
By Richard Spruce, F.R.S. Edited and Condensed by Alfred Russell Wallace, O.M., F.R.S. . . . In two volumes. London: Macmillan & Co., Limited. 1908. [Cloth. 8vo. Pp. LII+518; XII+542. Price, \$5.20.]

THE author of this work, a native of Yorkshire, who lived between 1817 and 1893, was one of the most notable naturalists that England has produced. He went to Brazil for the study of botany, arriving at Pará in 1849, and remained in South America until 1864, during which time his contributions to the herbariums of Europe were more important, perhaps, than those from any other one source at any time. He left numerous notes which he was never able personally to put into book form, and from these have been selected the material which appears in the two handsome volumes before us.

The upper Amazon country, when Dr. Spruce began his exploration, was very little known in any way to outsiders, and whoever knows North Brazil to-day can hardly fail to read with interest the story of his experiences for months at a time in regions where he was the first white man who had been seen by the natives. When he first went up the Amazon the site of the present city of Manaus was an Indian village, known as "Barra do Rio Negro," and the existence of rubber in that region was unsuspected. In fact, when he first went to South America the collection of rubber was confined to the immediate vicinity of Pará, at which town the market value of rubber was about to pence a pound. Dr. Spruce was not interested except incidentally in rubber, but was making a general botanical survey of the Amazon region. He discovered, however, the existence of various rubber species farther upriver, and more than once attempted to interest the natives in getting out rubber, but generally without success, the world's demand for this material not having become so important as after his time.

Before leaving South America, Dr. Spruce was commissioned by the English government to secure seeds and plants of the *Cinchona* species for transference to British India, at the instance of Mr. (now Sir) Clements R. Markham, who, by the way, was later instrumental also in the introduction of *Hevea* rubber into the Far East. Dr. Spruce rode muleback over the Andes, getting his collection of *Cinchona* seeds and plants to the Pacific over the route between Quito and Guayaquil, now traversed by a railway.

The work of Dr. Spruce having been completed nearly a half century ago, it can have no direct current relation to rubber gathering in the Amazon region. The study of the work, however, is well worth while to-day by those who may be concerned seriously in investments in forest rubber propositions in that part of the world, for the reason that, when one leaves the few centers of population on the Amazon, the forest conditions and the character of the native population has changed so little since Spruce's time. There are, to be sure, better transportation facilities on the Amazon and its leading tributaries, but otherwise, over vast areas explored by Dr. Spruce, conditions have been altered very little.

The editor of these volumes, Dr. Wallace, who was in Brazil during a part of Dr. Spruce's sojourn there, and who is still living, in his eighty-eighth year, is likewise a naturalist of distinction, as will be indicated by the statement that simultaneously with Darwin he announced the theory of natural selection—or "evolution"—his paper on the subject having been read on the same day as Darwin's paper.

JOHN A. ROEBLING. AN ACCOUNT OF THE CEREMONIES AT the unveiling of a monument to his memory. [Trenton, N. J.] Roebeling Press. 1908. [Cloth. 8vo. Pp. 63.]

A REPORT of the proceedings at the unveiling of the statue to Mr. Roebling, illustrated in THE INDIA RUBBER WORLD, August 1, 1908 (page 380).

MODERN AIR BRAKE PRACTICE; ITS USE AND ABUSE. A BOOK of Instruction on the Automatic, Combined Automatic, and Straight Air and High Speed Brake. . . . By Frank H. Dukessmith, M.E. . . . (Fifth edition.) Chicago: Frederick J. Drake & Co. 1908. [Cloth. 8vo. Pp. 417+XXXV. Price, \$1.50.]

THE importance of the air brake in the control of railway trains is now so firmly established that its use as a safety appliance is made compulsory. It may not be generally known, however, that schools for training railway employes in the use of the air brake are maintained. The fact that the practical work before us has gone through five editions within three years is an indication that the importance of thoroughly understanding the use of air brakes is appreciated by railway men. No reference is made in this volume to air brake hose, although no air brake system described in it would be practicable without hose. The author evidently assumes that good hose will be used, and confines his attention to the requisite of a good brake system and the proper use of the same. The makers of rubber hose may be interested in looking over this work as a source of information as to what is requisite in a good air brake system in connection with which their products are to be used.

ENSAYO SOBRE LAS PLANTAS USUALES DE COSTA RICA. Por H. Pittier. Washington: H. L. & J. B. McQueen, Inc. 1908. [Paper. 8vo. Pp. XI+176+30 plates. Price \$1.20.]

THE MEXICAN AND CENTRAL AMERICAN SPECIES OF *SAPIUM*. By Henry Pittier. (Contributions from the United States National Herbarium. Volume XII, Part 4.) Washington: Government Printing Office. 1908. [Paper. 8vo. Pp. III+11+8 plates.]

THE notable contribution to our knowledge of the botany of Central America covered by the first of these titles is the work of a former director of the Instituto Físico-Geográfico Nacional of Costa Rica, and now connected with the United States department of agriculture. An introduction is written by O. F. Cook, of the same department. The various rubber yielding species of Costa Rica are described here, and the "chicle" tree.

The monograph on *Sapium* species was undertaken as a study of possible rubber yielding species not formerly known. Mr. Pittier treats of the importance of *Sapium* as a rubber yielding genus in South America, where no less than nine species have been recognized as having value. He refers to the position of Huber and Jumelle, who designate as a *Sapium* a tree the product of which is mixed largely with the latex of *Hevea* in the "Pará rubber" region. [See THE INDIA RUBBER WORLD, August 1, 1905, page 365.] There are, as Mr. Pittier has found, several species of *Sapium* in Central America, and at least one in Mexico, and he sees no reason to suppose that some of them may not yield commercial rubber. In the San José valley in Costa Rica, the milk of a *Sapium* is used as a birdlime. We hope to see the work of this botanist followed by practical experiments with the latex of the trees he describes.

(1) A *HEVEA BENTHAMIANA* (MULL. Arg.) COMO FORNECEDORA de Borracha ao N. do Amazonas. (11) Sobre uma Nova Especie de Seringueira *Hevea collina* (Hub.) e as suas Afinidades no Genero. Pelo Dr. Jacques Huber. Pará; 1908. [Paper. 8vo. Pp. 10.]

THE indefatigable director of the Pará Museum continues his studies of the rubber yielding species in the Amazon, in which field he is excelled by no other botanist. The publication before us is a reprint from Vol. V of the *Boletim* of the museum, on the importance of *Hevea Benthamiana* as a rubber producer north of the Amazon, and the new species, *H. collina* and its similarity to other *Hevea* species.

IN CURRENT PERIODICALS.

NOTE sur la Valeur du *Castilleja elastica* en Afrique Occidentale Française. By Yves Henry. *La Agriculture Pratique des Pays Chauds*, Paris. VIII-69 (Dec., '08). Pp. 515-519.

Ein neues Verfahren zur Gewinnung des Kautschuks auf der Kautschukmisch. By D. Sandman. *Der Tropenpflanzer*, Berlin. XII-11 (Nov., '08). Pp. 520-524.

The Deresination of India-Rubber—I.

By H. O. Chute.

It is well known that all classes of crude rubbers contain impurities which affect their value, for nearly all the purposes of manufacture. The amount of these impurities varies from a small percentage in the best grades of plantation Ceylon to an amount sometimes equalling 90 per cent. of the total in low-grade Pontianak, and in general the value of a crude rubber decreases proportionally to an increase in the amount of impurities. These impurities are of two general classes.

The first class consists of accidental, or mechanical, impurities, such as water, sticks, stones, leaves, fibers, and such foreign substances as are removed in the processes of drying and washing to which all rubbers are subjected, and their removal constitutes the "shrinkage" which is always considered in valuing crude rubber and which is negligible in the highest grades only. These impurities, being easily removed by all manufacturers, do not depreciate the rubbers to a greater extent than their proportional weight in the whole mass and the cost of their removal.

The second class consists of chemical impurities, and comprises the matters in the original latex, aside from the true gum, or matters which are the product of decomposition or oxidation of the gum. These are resinous bodies which are found in all crude rubbers, and increase usually in amount as the rubber decreases in value. Not being removable in the ordinary purifying treatment, they are not only dilutants, but are of positive detriment in many processes to which the gums may be applied.

The amount of resins in crude rubbers varies greatly, as shown by some analyses which have been published, giving the results of testing various samples of the different varieties. The first publication of value on this subject was made in the *Journal of the Society of Chemical Industry*, by H. L. Terry, in 1889 (page 173). The following table shows the percentage of resins and the melting point of various resins, and the remarks give further description of resins:

Name of rubber.	Resin.	Melting Point.	Remarks.
Pará	1.2%	5°C.	Dark brown color; soft and sticky.
Ceará	1.3%	2°C.	Yellow; soft and sticky.
Columbian	2.5%	....	Brown; dry.
Mozambique	3.9%	18°C.	Yellow; glutinous.
Rio Janeiro	5.8%	64°C.	Hard, powdery; yellow to white.
Madagascar	6.1%	....	Ditto.
Sierra Leone	7.4%	....	Brown; contained glutinous body.
Borneo	7.9%	28°C.	Light brown; soft.
Assam	9.3%	15.3°C.	Yellow; sticky.
Mangabeira	10.5%	82°C.	Hard, like shellac.
African ball (1)	18.5%	38°C.	Brown; brittle.
African ball (2)	22.8%	20°C.	Dark brown; of various melting points.
African flake	41.2%	20°C.	Ditto.

These figures were obtained after the rubber had been washed, and therefore are based on dry rubber. They resulted from cutting the rubber into fragments and extracting with 90 per cent. alcohol in a Soxhlet extractor.

It is said that these melting point determinations are not of much value, as it is clear that the resins are mixtures. It is to be observed that these resins do not correspond with Spiller's resin, which is an oxidation product of rubber, but these resins are probably produced in the tree before the latex is collected, and no amount of care will produce a rubber free from these resins.

Caoutchouc, which has undergone complete oxidation, consists principally of a hard, brown, transparent substance, shellac-like, called Spiller's resin. This resin is an acid, combines readily with soda and potash, forming soaps which are soluble in cold and hot water. Spiller described this resin many years ago. He found it to contain 27.3 per cent. of oxygen. The chemical formula $C_{10}H_{16}O_2$ has been assigned to this resin, but this would

correspond to only 23.5 per cent., so that this cannot be the correct formula.

No one seems to have examined these resins to determine their exact composition or chemical nature. It is particularly important to know what action takes place with the resins when submitted to the processes to which rubber is treated. Of importance in this connection is a report on the analysis of the different brands of india-rubber by David Spence, PH. D., in the *Quarterly Journal of the Institute of Commercial Research in the Tropics*, of Liverpool, in 1906 (pages 75-77). Some details from this are given here on account of the description of the resins.

"The rubber was cut up very fine and dried in an air oven over calcium chloride at 55° C. until constant in weight. The dried product was then extracted with acetone, the acetone extract being afterwards dried and weighed.

"The residue left after exhaustive treatment with acetone was again dried, and the caoutchouc was estimated in an average sample of the resulting product by digesting the same with chloroform until complete 'solution' of the caoutchouc took place. The colloidal solution was allowed to stand until any coagulated proteid had settled out, and was then filtered and the chloroform evaporated. The thin film of pure caoutchouc obtained from the chloroform extract was dried thoroughly over calcium chloride and weighed. The residue insoluble in chloroform, which represents mineral matter, vegetable fiber, coagulated proteid, and in some cases the so-called insoluble rubber, etc., was also weighed.

"The following results were obtained for samples of the commercial india-rubber before it had undergone any treatment:

GRADES.	Moisture.	Resin.	Rubber.	Residue.
	%	%	%	%
1. Pará, hard cure, South America ..	14.30	2.73	71.09	11.71
2. Ceylon Pará, Ceylon	0.53	3.93	90.38	5.03
3. Gold Coast hard lump	8.74	19.72	69.22	2.37
4. Gold Coast soft lump	10.90	17.71	67.40	4.24
5. Pará rubber, Gold Coast	0.27	2.31	93.92	3.30
6. Gold Coast niggers, Gold Coast ..	8.86	4.12	82.84	4.73
7. Ficus Vogelii rubber, Gold Coast ..	0.302	35.37	61.79	0.903
8. Rangoon, Burma	0.58	6.81	84.61	8.16
9. Lagos lump, Lagos	3.4	10.56	80.88	5.39
10. Lagos root, Congo	3.0	3.34	73.35	23.51
11. Congo root, Congo	2.30	7.02	83.00	7.74
12. Sierra Leone niggers (a)	5.3	5.54	80.46	9.05
13. Sierra Leone niggers (b)	2.9	4.97	65.5	26.40
14. Pernambuco scrap	4.8	4.35	58.75	32.31

RESINS.

RESINS.	RESIDUE.
1. Soft, oily.	Insoluble rubber.
2. Hard, glue-like.	Insoluble rubber.
3. Hard but non-crystalline.	Insoluble rubber; bark.
4. Hard.	Insoluble rubber; fibrous material.
5. Soft and oily.	Very little insoluble rubber.
6. Hard and dry.	Largely proteids and some mineral matter.
7. Hard, clean, dry, amorphous.	.....
8.	Bark, small quantity insoluble rubber.
9. Soft and glue-like.	Largely fiber.
10. Hard, dry, amorphous.	Root, fiber, sand.
11.	Root and fiber.
12. Fairly hard but glue-like.	.....
13. Fairly hard.	Bark and other impurities.
14. Hard but not amorphous.	Insoluble rubber and bark.

The variability of the amount of resins which may be found in the various classes of rubber is illustrated by the results of analyses made by Lyman M. Bourne [see *THE INDIA RUBBER WORLD*, December 1, 1906—page 75.] His table covered 181 analyses of all classes of rubber, and the results of a few of the more important are given here.

Three samples of Ceylon Pará fine averaged 2.5 per cent. resin and 97.5 per cent. rubber with no shrinkage, this being the only variety without shrinkage. The average of 23 samples of Brazilian Pará fine showed 96.6 per cent. rubber and 3.4 per cent. resin, with 17 per cent. shrinkage. Six samples of prime Assam, from India, showed 15.8 per cent. resin. Two samples of Borneo second and one of Borneo third showed 19.3 and 20.7

per cent. resin, respectively. Seven samples of Upper Congo gave 13.8 per cent. resin. One sample of Brazilian strips showed 28 per cent. resin. Three samples of Mexican guayule showed 25.4 per cent. resin and 25 per cent. shrinkage, and seven samples of Pontianak showed 75 per cent. resin and 60 per cent. shrinkage.

In analyzing these samples they were dissolved in benzol and the resin was precipitated by addition of alcohol, the gum remaining in solution. Dr. Weber, in his work on the analysis of rubber, advises that samples be treated by the method of Soxhlet extraction, using acetone as a solvent of the resins while the rubber is not dissolved.

These two processes of analysis are mentioned as they typify the processes which have been used in the large way to separate the resin from the gum. What the effect of the resins is on the gum does not seem to be well known or recognized, and it is evident that if these resins differ greatly in their character their effects would differ considerably. As examples of this, it may be stated that the resin from Pontianak gum is a hard resin, melting above the boiling point of water, and that it is not affected by sulphur at the vulcanizing temperature. It has certain physical resemblances to the ordinary rosin or colophony, but it differs greatly in chemical characteristics.

On the other hand, the resin from guayule rubber is at ordinary temperatures a tarry mass of exceeding stickiness. It is quite susceptible to the action of sulphur, which gradually hardens it, but it at no time is flexible, but when completely hardened is glassy and brittle. Now it is evident that these two resins would act entirely differently in a compound, both while working and when cured.

Of the other resins—that is, those found in other rubbers—very little seems to be known of their action, but as all rubbers with high resin contents sell for lower prices than those with low resin contents, there seems to be no reason to assume that their action is in any case advantageous or their presence desirable.

Most of the analyses which have been published relate to the higher grades of rubbers, whose resin contents are in all cases small, and in these rubbers the influence of the resin is probably negligible in all cases. Of late years there have come on the markets great quantities of low-priced rubbers, such as guayule and Pontianak, whose resin contents are high. These rubbers are offered at prices such that their actual contents of pure gum can be obtained much more cheaply than the same amount of gum can be obtained in the higher grade of rubbers which do not contain any appreciable amounts of resin. It would seem, therefore, that the trade recognizes these resins as being injurious.

If these injurious resins can be extracted from the low-grade rubbers without injuring the gum itself, and in a practical and economical way, it would enable these cheap products to be used in many cases for a higher class of work than they have been used for in the past, and the extraction of the resins would therefore seem desirable.

A number of manufacturers have had their attention called to the possibilities of this work, and a number of experiments have been made on a commercial scale, and some plants have turned out large quantities of deresinated rubber and are still at work, while others have worked for a time and have then discontinued operations. Most of the deresination has been done at rubber goods factories, and most of the product has been used in the same works, so that little has appeared on the market, and few know of the extent of the industry. Very little has been published on the subject, and almost nothing made public as to processes or results.

A number of patents have been taken out in connection with deresinating rubber, however, and it is evident that considerable thought has been given to the subject. In looking over the patent specifications it is seen that the processes of deresination divide themselves into several classes, as follows:

(1) Those processes which depend on the action of alkali on the resins. (2) Those in which a solvent is used which, when hot, may dissolve both the rubber and resin, but when cooled will precipitate out the gums. (3) Those which are a solvent for both rubber and resin, and then precipitate out the gum by addition of another solvent, which will keep the resin in solution. (4) Those which use as a solvent a volatile liquid in which the resins are soluble, but which does not dissolve the rubber to an appreciable extent.

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THE COLOR OF RUBBER HEELS.

SOME of the larger factories are making a specialty of rubber heels on certain lines of women's and mostly in house shoes, says *American Shoemaking*. In all cases half of the heel is of leather. This heel has bothered some of the finishers, because the rubber would not finish the same color as the leather on the edge, and as a result the edge had two colors. In one of the leading factories, however, they have gotten over this trouble. The edge is blacked and when dry is put on a coarse bristle brush which has been covered with cloth. The operator applies wax repeatedly to the brush or wheel on every few shoes, which helps keep the blacking on the edge. The more often wax is applied the better for the edge. It should be stated that these rubber heels were a very dark color in the first place, which helped the finish. It is the rubber heel light blue or grey in color that gives most trouble to finishers.

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To reach this plantation one had best start from the seaport of Bahia (São Salvador do Bahia), a city of over 200,000 inhabitants, far down on the coast south of Pará. Here one takes a train for about 360 miles over the government guaranteed railway to Joazeiro, on the important river São Francisco. Below this point navigation is impeded by the Paulo Alfonso rapids, by some considered the greatest in the world. Above the rapids are regular services of steamers, some of them up to 2,000 tons. Proceeding upstream, say to Remanso, one debarks and travels overland for about 72 miles, until São Raymundo is reached. This is in the little grazing state of Piahy—except that it wouldn't be a "little state" outside of Brazil.

Here, beginning some four years ago, a New York firm trading in hides, rubber and other Brazilian products, with a house at Bahia, acquired 54,000 acres of land, covered with rubber and other forest growths, and began systematically to lay out plantations of "manicoba" rubber. First of all, they considered the most desirable conditions for the growth of this species. Different areas have been planted for different reasons. One plan-

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This large number of trees does not imply any such area as would be the case with a similar number of *Hevea* trees—the rubber planted in Malaya. The *manico beira* is, relatively, hardly more than a shrub; it occurs naturally closely grouped, and may be planted at very short intervals. In this case about 1,300 trees to the acre is the average and about three square miles have been planted. Tapping begins at three or four years. There are, as a rule, in addition to the top root—which points downward until moisture is reached—three lateral roots, which are short and stocky, and it is these which yield the latex, under the practice on the plantations at São Raymundo. The Northway tapping knife has proved less satisfactory here than the crude appliance which the natives form by bending a section of barrel hoops and sharpening the edges of the metal at the bend. The natives coagulate the latex in holes in the ground, without the addition of any coagulant; the planting company will, of course, adopt methods better calculated to yield a clean product.

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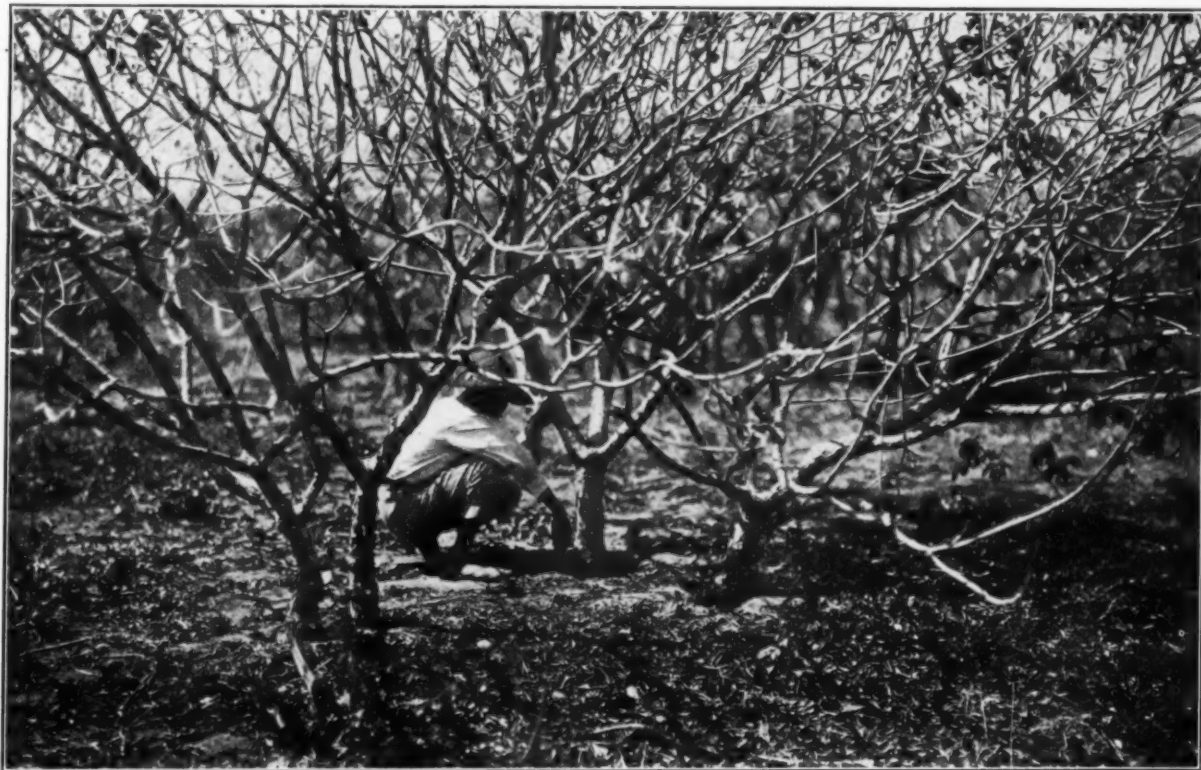
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"*MANIHOT DICHOTOMA*," NEAR CALDERAO, BAHIA.
[Photographed by Ernest Ule. October, 1906.]

been obtained, this company will be well satisfied with an average of one pound per year. At the first tapping of 200 three-year-old trees the yield of dry rubber was 71.65 pounds. The yield per tree varied, a single specimen at the first cutting giving 200 grams of latex, or .44 pounds, but this, of course, was exceptional. The best time for tapping has been found to be just after the rainy season, and when the leaves are falling. The yield is markedly less in a dry year, which the company believe to be due to the absorption by the tree of the latex, in lieu of any other supply of moisture. Mr. I. Henry Hirsch, of the company, states that native *manicoba* trees, if not tapped, have often been found with the bark cracked, allowing the latex to escape, where it dries on the tree and can be collected in shape for market.

Three species have been planted, which are named here in the order of the relative estimation placed upon the three:

Manihot Piauhyensis (Ule)—Remanso rubber.

Manihot dichotoma (Ule)—Jequie rubber.

Manihot Glaziovii (Müll. Arg.)—Ceará rubber.

Rubber from the new plantation has been marketed already, in New York, London and Bordeaux, with satisfactory results. About April 1 sales were made in New York at 85 cents a pound. The enterprise here reviewed is a private or "close" corporation, The Brazilian Rubber Plantation and Development Co., registered July 6, 1906, under the laws of New York. The president, Mr. Adolph Hirsch, is the head of Adolph Hirsch & Co., commission merchants.

THE DIFFERENT SPECIES OF "MANIHOT."

The rubber tree of Ceará, a Brazilian State, uniformly described as being particularly liable to drought, long has been of interest to the world if only for the reason that it flourishes under cir-

cumstances so unfitted for the success of other rubber species; besides, the product is of a good grade, and the plants fairly productive. The Ceará rubber tree was among the first in South America to be identified botanically, it having been designated by Johann Müller, of Aargau, as the *Manihot Glaziovii*. But the determination of the species having been made from plants grown from the seed at Kew, the question from the first was involved in some doubt. [See a comprehensive article in THE INDIA RUBBER WORLD, November 15, 1890—page 35.]

From the date of the earliest attempts at rubber culture, Ceará rubber was experimented with, either under this name, or *Manihot*, or "*manicoba*," which is the native local name for it. The first rubber exported from Ceylon [11 cwt. in 1889] was from planted Ceará, and considerable of this variety was planted, but later *Hevea* rubber succeeded so well in the Far East as almost to overshadow every other kind. In German Africa, however, and in some other regions less well adapted than Ceylon and Malaya, to the *Hevea*, Ceará rubber continues to be planted on a large scale. Why not, then, in its native habitat?

Gradually it became known that the rubber trees or shrubs known locally as "*manicoba*" did not all exhibit the same characteristics, and particularly that the trees in different sections possessed different values as rubber producers. The most thorough scientific study of the "*manicoba*" rubber, perhaps, is that by Ernest Ule, published by the royal botanical garden and museum, at Berlin. Ule made several journeys into the regions where this rubber is found native, with the result that, in addition to the tree already known as *Manihot Glaziovii*, he described three distinct species: *Manihot dichotoma*, *M. heptaphylla*, and *M. Piauhyensis*.

Three of the four species are illustrated herewith.



PLANTATION OF "*MANIHOT GLAZIOVII*."
[Brazilian Rubber Plantation and Development Co.]
[Trees 2 years and 9 months from seed.]

"Valorization" of Rubber in Effect.

THE legislation requisite for giving effect to the projects for the so-called "valorization" of rubber in Brazil has now been enacted as regards two of the three important rubber producing districts in that republic. The measure adopted by the legislative assembly of the state of Pará [see THE INDIA RUBBER WORLD, January 1, 1909—page 154] has been signed by the governor, and this applies to all the rubber produced in the state of which Pará is the capital. The national budget law of Brazil for 1909 authorizes the president of the republic to grant a reduction from the export duty on rubber produced in the federal district of Acre on terms similar to those embraced in the proposals adopted at Pará. The third and remaining rubber producing district in Brazil of first importance is the state of Amazonas, of which Manáos is the capital.

The federal law, No. 979, of January 6, 1903, offered certain inducements to syndicates that might be organized in the agricultural and rural industries, the benefits to be participated in only by Brazilians. The effect of the legislation at Pará is to extend definitely the provisions of the law of 1903 to the rubber interest, and the act adopted at Rio de Janeiro is of the same purport. The first and major advantage from the proposed legislation is to afford a reduction in export duties on rubber to those who comply with the terms of the law—a reduction so material as to affect seriously foreigners who may be engaged in the exporting of rubber. The object, of course, is to give Brazilians the preference, and the idea evidently prevails that with so large a volume of rubber exports from the Amazon there must be correspondingly large profits, which profits hitherto have gone to foreign firms, thus being in a sense a drain upon the resources of Brazil.

Hitherto the exports of rubber from the Amazon, involving an important amount of capital, have been financed by the exporters, who are almost wholly foreign. The collection of rubber in the Amazon region is facilitated by local merchants who advance supplies to the proprietors of rubber camps on the islands and up the rivers, who in turn distribute these goods to the rubber workers and make shipments of the rubber collected to the provisioners, principally at Manáos and Pará. These latter, termed *aviadores*, are the receivers of rubber in the primary markets, from whom the export houses at Pará, for example, purchase day by day their requirements for the world's trade. Under the new régime the plan is for the *aviadores*, working in connection with the producers of rubber, to keep in touch with the product until it has reached the consumer. The plan looks further, however. There is involved not only earning for Brazilian capital the profits of exporting rubber, but the possibility of controlling prices for the product to a degree which has not yet been witnessed with respect to Pará rubber. In other words, the working out of this system would involve the holding of rubber stocks whenever prices were not satisfactory to the sellers until more favorable opportunities offered for marketing the rubber. In the past the *aviadores*, receiving rubber constantly from upriver customers against advances of merchandise, have been interested in marketing the same as promptly as possible, whether or not a profit was realized, and working independently and without the assistance of other than their own capital, any other course was scarcely open to them.

A new element has been introduced into the situation by the establishment at Manáos and Pará of branches of the Banco do Brazil, of Rio de Janeiro, practically a national institution and descended directly from the first bank known in Brazil founded by royal charter in 1808. The authorized capital of this bank is 70,000,000 milreis and the amount subscribed to date is 45,000,000 milreis, amounting at par of exchange to \$24,570,000.

The Banco do Brazil, based practically on the natural resources, is in position to make advances to *aviadores* on their rubber to an extent impossible in the past by any banking institution on the Amazon, and upon this possibility evidently is based the hope of the rubber producers to hold their rubber in times of low market quotations, and to a degree control the production of rubber. What will be the effect of the new system only time can tell, of course. The valorization of coffee, a product of the southern Brazilian states, has been in effect now for nearly two years, on a somewhat different basis, but opinion is divided, first, as to what results have already been obtained, and secondly, as to what the final and lasting effect upon the coffee market will be. It is clear, however, that the coffee valorization plan has appealed strongly to the native rubber interest, and that the new legislation in reference to rubber is a direct outgrowth from what has been done in respect of coffee.

Two features in the rubber market to-day are attributable to the valorization movement: (1) reports come from Pará that rubber is being held there by certain parties at higher prices than those obtaining in the consuming markets; (2) statistics of stocks of rubber in the consuming markets embrace an unusual volume of "consigned" rubber, implying that rubber is being shipped to New York and Europe through other than the usual channels, which must be regarded as rubber handled by or for Brazilian syndicates under the new system. There are reports of offers of rubber to manufacturers at slightly higher prices than the regular importers are quoting by parties who are supposed to represent such syndicates as are here referred to.

WHAT "LE BRESIL" (PARIS) SAYS.

WISHING to pursue, in the general interest of this country, our inquiry regarding the laws recently passed in Pará and Rio in consideration of the valorization of india-rubber, we have interviewed a person established in the Paris market who is thoroughly posted in regard to this product and to its Brazilian and European markets. This gentleman proved to share the adverse opinions we have previously expressed in respect to these measures which their opponents consider unconstitutional, and he likewise considered them to be merely an artificial expedient which would in the end produce results wholly contrary to the commendable purpose which the governments of Rio and Pará had in view.

There is, first of all, reason to fear that the producers will find themselves in the near future confronted by a market of insufficient volume, as soon as the ample absorbing facilities and elasticity which it has heretofore enjoyed shall have disappeared in consequence of the partial or complete withdrawal of the foreign firms established in Brazil. The producers will then have to deal exclusively with the domestic syndicates, which will compel them to pass under their yoke, unless they resign themselves to wait for higher quotations than those which the syndicates are willing to offer them.

This condition will result in the accumulation of large stocks of rubber in the places of production. In this connection it will be well to remember that rubber will show a loss of weight of about 1 per cent. per month during the first few months after it is placed in storage.

As long as the active trade in the Brazilian market enabled producers to sell all their supplies in advance for future delivery, they were not compelled to face this large contingent loss which may henceforth absorb, or even exceed, the small benefit which the new law intends to reserve for them. They will then be compelled to look to Europe for advances by shipping their cargoes, the arrival of which may cause sudden and disastrous declines in prices.

In this connection we should, however, bear in mind that the accumulation and keeping of large stocks of rubber will scarcely be practicable; or, at all events, it will be exceedingly risky. (1) In view of the loss in weight which the rubber would suffer, while there is not much loss in the case of other products—coffee, for instance, frequently showing an increase in weight; and (2) on account of the high rate of interest that would be charged for loans made on rubber warrants.

These losses in weight and interest charges would be all the more crushing because they must be borne by a very high-priced product of world-wide consumption, and consequently on enormous amounts.

In stating their reasons for the measures taken in Pará and Rio in view of the valorization of rubber, the advocates of these measures upbraided the foreign firms established in Brazil for charging high rates of interest for advances made by them to producers in the interior.

These rates of interest, which range between 10 and 12 per cent., are by no means excessive, being no higher than those charged in similar cases in most of the colonies, such as Indo-China, for instance, although the money lenders run less risk in that country than in Brazil. The rates customarily charged in this country [France] are amply justified by the fact that lenders have no collateral whatsoever, nor any security for the satisfactory settlement of their business operations, which are carried on at enormous distances from their own headquarters, sometimes as far as 50 days' travel from the Amazon, and involve many dangers, such as those frequently incurred in passing the rapids, as well as the dangers inherent to an unusually unhealthy climate.

If the Brazilian producers sorely suffered, as they aver, from a panic in the rubber trade during 1908, they were, alas, not the only sufferers, for their bankers have had to pay ample tribute, in consequence of the general depression which prevailed at that time.

Moreover, the question arises whether the said panic, a recurrence of which the Brazilian legislators appear to be trying to prevent, must be attributed to local conditions, which it could remove or at least modify by legislation.

But such was by no means the case! The crisis which seriously upset the rubber markets of the world was due to the same causes as the panic which successively seized all the markets of every description throughout the world. It was caused by the general tightness of money which was the immediate consequence of the great American panic. The legislators of Pará and Rio believe, more especially, that the measures they have adopted will restore the rubber market to a healthy condition, since dealing in futures has become impossible, and there will no longer be any speculation to disturb the market.

Unfortunately, however, the market, on the contrary, will be restricted to such an extent that the producer will no longer be able to exist, while the speculation—for there will always be speculation in spite of all—will be in the hands of operators belonging to an inferior class, or of such doubtful standing that only its disadvantages will be felt.

Furthermore, it is universally acknowledged in all markets for products of large consumption, as well as the financial centers, that operations in future, largely in conjunction with cash transactions, constitute the factor which creates the ample market activity required for the maintenance of values, and will in a majority of cases allow of a natural leveling of quotations in the various markets of the world, without any excessive jumps.

A BRAZILIAN VIEW OF VALORIZATION.

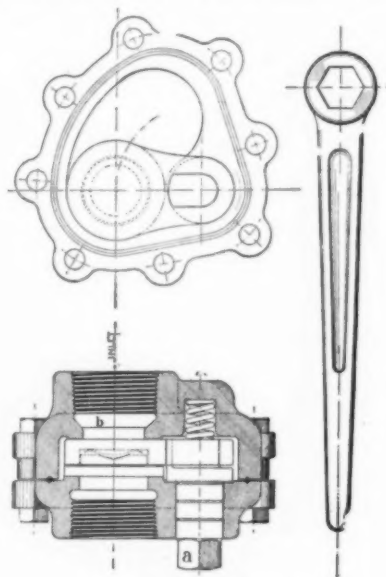
The fluctuations in the prices of rubber such as were illustrated in a chart in this journal [January 1, 1909—page 140] are discussed at length in *The Brazilian Review* of March 9, which remarks that such marked changes are most inconvenient for the producers, who may in a momentary decline see the fruits of

their labor for years swept away. Why, they angrily inquire, should such things be in a world that apparently can never get rubber enough? They are not satisfied always by an explanation which refers merely to the law of supply and demand. The writer in the *Review* does not question the operation of this natural law, but is of the opinion that it is possible by manipulation to so regulate supply that it shall exceed demand, and send prices down, or stimulate demand and send them up, which he considers to have been done. That the relations of supply to demand are generally normal, he says, is shown by the figures to the world's visible supply at the end of each season, which of late have scarcely varied. All the rubber produced has gone into consumption. In the interval, it is true, there may have been moments when supplies coming too quickly into the market exceeded the capacity of the demand, or *vice versa*—circumstances which are liable to be taken advantage of by speculators.

All that is wanted to secure stability of prices according to the *Review* is to eliminate speculation, to do which it is only necessary to keep supply on a level with demand. To keep supply and demand even rubber must be held back at its source until it is wanted for consumption. The writer in our Rio contemporary does not go into details as to how the control of rubber prices can be brought about, but his article closes with the insistence that Brazil, threatened with the competition of the rubber plantations of the Far East, should, while Amazon rubber does still dominate the market, insure to producers a fair price for their rubber, and meanwhile exert every effort to reduce the cost of producing forest rubber and encourage plantations in the native habitat of the *Hevea* species.

"EVERLASTING" BLOW-OFF VALVE.

OSGOOD SAYEN, himself a practical rubber man, has produced many valuable specialties for the rubber trade, but none more valuable than the Everlasting Blow-Off Valve. It is so simple that the illustration is in itself a description. The



"EVERLASTING" BLOW-OFF VALVE.

valve is composed of a top and bottom bonnet, a disc, a lever and a post, and that is all. It is very substantial in construction, has no clogging features and is always clean and tight. This is sold by Osgood Sayen, No. 421 Arcade building, Philadelphia.

The India-Rubber Trade in Great Britain.

By Our Regular Correspondent.

AN innovation of some importance is the offer to the trade of certain well known brands of rubber, which have been semi-washed and standardized. Nothing has transpired as to who is behind this new move, the rubber manufacturers being requested in the advertisements to apply to their ordinary

WASHED RUBBER FOR SALE.

brokers for sample prices and terms. Presumably the rubbers mentioned, which include Madagascar, Borneo and Peruvian, are cleansed in the countries of production, and as there is a rating in freight on worthless material. This, of course, is in the direction advocated for some time by many connected with the trade, if only on the ground that it makes it much easier to judge of the value of a lot by inspection and also to take average samples for analysis. The expression "semi-washed" indicates that the raw rubber is put through a cleansing operation. This, of course, costs money and it remains to be seen whether there really is much saving in this half washing, if the rubber has all the same to be washed at the factory to complete its purification. The expression semi-washed may mean a rather different thing, according to the brand of rubber; some rubbers might be really pure enough for use without further washing, as in the case of plantation sorts. Others, again, like Manicoba, which is specially mentioned, are hardly likely to have all their fine sand removed by any semi-washing. From what I have heard in one or two quarters, there does not seem to be any great enthusiasm in the trade about the new proposal. The large users of rubber, more particularly, will still, I think, prefer to go on buying raw rubber as before, and have it washed under their own inspection. They have got into the way of judging its value with sufficient accuracy, and they can always recognize a particular brand in the raw state—a matter which might not be so easy in the case of semi-washed rubber. Then as they already have capital sunk in washing machinery they seem to think that they may as well do the work. The case will probably be different with small users, who may be attracted by the new move. As far as I know there is only one factory especially washing rubber for the trade, and this is a small concern situated at Holywell, in North Wales.

PRICE OF ZINC OXIDE.

Of importance to those interested in mining and metallurgy is the long-talked-of combine between the leading European producers. This has recently been successfully negotiated, the main object being the regulation of the output when the market price falls below £19 per ton. How far they will put the price up when trade begins to boom again it would be idle to forecast, but seeing the great increase in the American output in recent years and what may be expected from the Broken Hill dumps, it seems probable that the price of the metal will not go beyond £25 a ton. At the present price of £21 there is not much profit even for good mines, and we may expect a rise. But not to talk any further on the metal, it follows from what has been said that the price of the oxide is less likely to fluctuate in the future than in the past, and I don't think that there need be any fear that the new combination will attempt to raise the prices of the metal and to the high figures of three years ago, unless some extraordinary trade boom should precipitate this as a natural sequence.

In the work "Crude Rubber and Compounding Ingredients" there is a paragraph stating that Charles T. Harris used an

BISMUTH IN RUBBER GOODS.

artificial bisulphide of bismuth for curing rubber heavily compounded with carbonate of lead. I am always rather suspicious about the reported cures with metallic sulphides, and

have no doubt that this bismuth compound contained free sulphur. However I am not writing specially about this compound, which may or may not have ever come into commerce; I wish rather to refer to the use of bismuth generally. Except in the metallic state as a component of certain mold, I have not so far come across bismuth in any form in the rubber works. I understand, however, that its compounds have at least one important application, and that is in the rubber gloves used by surgeons working with X-ray apparatus. Bismuth compounds, it appears, are quite impervious to these rays and there is a regular sale of bismuth compounded rubber gloves for X-ray hospital use. I don't suppose the total business amounts to very much and a good price, I understand, is charged by the London dealers who specialize in X-ray apparatus. Quite recently an alteration in procedure has led to the use of gloves by the surgeon being abandoned to a great extent, so this paragraph is not worth the attention of the controllers of the American bismuth "ring."

THIS is a matter which is attracting a good deal of attention and comment in England. The interest is by no means confined

THE NEW FRENCH TARIFF.

to our manufacturers who export goods to France; it is also being laid hold of by the mass of conservative politicians as an aid to the promulgation of the tenets of tariff reform, a topic which is in the forefront of the conservative party's programme. But not to enlarge on matters political, there is no doubt that the new French tariff if adopted will hit many British industries hard and a good many representations have been made by chambers of commerce to the French authorities on the basis of the opinion expressed by our manufacturers. It would take up too much space to refer to the proposals as they affect the rubber trade generally, and I shall refer only to a single branch. The most important item in this connection is elastic webbing, the increased duty on which has caused a good deal of alarm in the midland towns where the industry finds its headquarters. The French evidently are desirous of still further protecting their own webbing industry, which is already one of considerable magnitude.

Card clothing for textile mills is practically all imported from England, 19,463 kilograms out of a total import of 19,753 coming from this country. I believe I am right in saying that there is only one small factory in France concerned in the manufacture of these goods, so the textile industry generally will be penalized for the benefit of this factory. The present tariff is 90 francs general and 70 francs minimum per 100 kilograms and the new one is to be 105 general and 70 minimum, if imported without felt, and 120 general and 78 minimum if with felt.

I WAS informed recently by Mr. L. Spencer, managing director of the Gorton Rubber Co., Limited, that they had enlarged their

ENLARGEMENT OF WORKS.

factory and taken on many more hands. Now I hear that they have gone a step further and obtained possession of the Droylsden Rubber Works, not far away, so as to have still more accommodation for the increase of their tire trade, though other goods for which the Droylsden works have long been noted will be manufactured as before. Messrs. Charles Macintosh & Co., Limited, have also added considerably to their premises by taking over the adjoining works occupied for so many years by Messrs. Robert Peel & Co., Limited, now a branch of the Bradford Dyers' Association. I understand that the newly acquired premises will be used chiefly for the manufacture of motor tires, a department that has shown a great increase of late. I regret to say that Colonel R. K. Birley, managing director of the firm, has had a prolonged illness and been quite unable to attend to

business. His long connection with the local Artillery Volunteers, now Territorials, has just ceased by his retirement, this, however, being in the ordinary course of events and not in consequence of his illness.

AFTER the somewhat glowing account I gave about a year ago of the prospects of the Panther rubber scrap machine, as erected

THE PANTHER MACHINE.

at Leyland, I was quite surprised to see it stated recently in a legal case that it had proved an utter failure. It seems that while sound in principle the mechanism proved too complicated, or at any rate inadequate for continuous work, and that firing was also of frequent occurrence. Looking at the number of patents connected with rubber which have been taken out it is remarkable how very few have attained any industrial importance. The majority seem to have only done good service in one direction—that of aiding the authors of books on rubber to find sufficient material to fill their pages.

SOME German firm has gone to the trouble of patenting the use of naphthalene as a component of rubber mixings. Claim is

NAPHTHALENE IN RUBBER GOODS.

made for its use in place of paraffine wax or ceresin where these are commonly employed to diminish porosity; as a reclaiming agent and as a solvent for spreading purposes. I cannot myself see where the advantages of naphthalene come. In solvent naphtha it has always been considered an objectionable impurity, as it leaves a strong smell on the goods, owing to its slow evaporation, and the difference between ordinary and odorless naphtha as sold for proofing purposes, has generally been in the freedom of the latter from naphthalene. As for its replacing paraffine wax I should have thought that its volatility was all against it. Even in its capacity as an insecticide in place of camphor naphthalene has come to be generally regarded as more nasty than useful, and I cannot think that there will be any rush on the part of the rubber trade to avail themselves of the new proposal for its employment.

It has been my custom when leaving the shores of England to write something on my return about rubber works I have seen or heard of. In Ireland, however,

IRELAND.

where I have just spent a fortnight, the rubber works come in the same category as the snakes, so this paragraph will only be a short one. Certainly the mackintosh is largely used by the well-to-do and no doubt there is a demand for rubber goods generally. I did not, however, notice in the towns I visited any shops devoted entirely to the sale of rubber goods. The peasants of the wild west laughed at the idea of mackintoshes and seem to heed nothing of getting wet through. Perhaps their coarse homespun woollens give them an advantage over those who buy Yorkshire shoddy. By the way, I heard of a new use for gutta-percha in a county which has always had a reputation for "rowdiness." A very substantial walking stick, home made, is hollowed out at the end, filled up with molten metal and plugged with gutta-percha. This weapon, I was told, was very handy in scuffles with the police.

INVENTOR SIMPSON'S PERSISTENCY.

A POPULAR periodical prints a story regarding the hardships long endured, rivaling those of Charles Goodyear, by another inventor, "who discovered that gutta-percha was a non-conductor of electricity." At least so the story runs. The inventor referred to is George Simpson, the history of whose insulation patent has been given in THE INDIA RUBBER WORLD (June 1, 1906—page 290.) Some details from the lately published story may be worth repeating, however. It appears that Simpson was a Missouri man. When he made his first application for a patent for insulating electric wires with gutta-percha, shortly after Professor S. F. B. Morse had brought out the telegraph, he borrowed money for the fees from Amos Kendall, a prominent

politician, who was sometime postmaster general and who assisted Morse with his patent.

From the date of Simpson's first application until congress and the courts had established that he was entitled to a patent and his rights under it had been construed, was just 29 years, during which time Simpson derived absolutely no benefit from his invention. The story is that he started out without any money, and rather than beg he worked his way by taking any employment that might be offered him. Walking from St. Louis to Washington he would hoe corn at one place or drive a truck at another and at the national capital is said to have worked as a day laborer on the foundations of a building for the patent office.

A NEW INSULATION FROM MEXICO.

A PLANT said to be abundant in most of the states of Mexico and asserted to yield a wax which has proved adapted for the insulation of electric wires is reported on at length in the Monterey News. The plant is known locally as "Candelilla;" it is described botanically as *Pedilanthus pavonius*, and belongs to the *Euphorbiaceae*. The common name of this plant is based upon the use of its product for making candles. It has been used also as a substitute for beeswax, and is described as having a value for varnish and polishes, giving more luster than the high-priced carnauba wax, from Brazil. The candelilla is said to contain rubber, but not enough to make its extraction profitable but the wax content is high. The plants grow to a height from 3 to 5 feet, as many as 100 stalks springing from one root. The Cia. Candelillera Mexicana S. A., recently organized in Monterey, have patented a process for extracting the candelilla wax, and are reported to be operating a factory, besides which several other factories are at work in the republic, all using this patented process. The people interested in this product seem to think that the success lately experienced in respect of guayule rubber will be duplicated with candelilla.

NEW GUAYULE FACTORY RUNNING.

THE factory of Compañia Guayulera de Torreon, Sociedad Anónima [see THE INDIA RUBBER WORLD, April 1, 1909—page 235], is now in operation. It is located at Puerto del Carmen, between Nadadores and Cuatro Ciénegas, and convenient to the International Mexican railway. The location was decided upon particularly on account of the waterfall there which affords abundant power at a low cost. The company have at their disposal a large amount of guayule shrub. *El Fomento Industrial* (Mexico, April 1) contains a full account of the formal ceremonies at the opening of the factory and of the banquet following, with views of the works and of the waterfall.

COST OF WATERPROOF GOODS IN MEXICO.

IN regard to the rubber clothing trade in Mexico the United States consul at Vera Cruz mentions that the prices charged are such that most people cannot afford to buy. He reports that, largely on account of the import duty—50 cents, gold, per kilogram [=22½ cents per pound]—a pair of overshoes will cost in Vera Cruz about two and one-half times as much as in the United States. A pair of rubber boots, he says, cannot be purchased there for less than \$8. In the line of rubber coats, capes, hat covers, and the like, the same conditions prevail. The consul writes:

"A rubber coat, known in the states as a 'slicker,' and which could be bought for about \$3.50 in any department store, costs here \$8 to \$9. A so-called 'poncho,' worth about \$2 in the states, is proportionately costly. The import duty on this class of goods amounts to \$1.25 United States currency per 2.20 pounds [56½ cents per pound]. Native article in the shape of a 'poncho' is on the market, but the vulcanizing is so poorly done that the goods become worthless within a short time."

What Is Doing With the Tariff at Washington.

THE house of representatives at Washington on April 9 adopted the tariff bill (H. R. 1438), known as the "Payne bills," referred to in THE INDIA RUBBER WORLD April 1, 1909 (page 245), after which it went to the senate. The finance committee of the latter body, having considered the measure, on April 12 reported a substitute bill (S.), through Senator Aldrich, chairman of the committee. This bill is now under discussion, and its passage at an early date is expected, after which a conference committee appointed by the two branches of congress will be in the regular order of procedure, and the bill as finally agreed upon by them will be that to become law.

The changes from the Payne bill embodied in the Aldrich substitute are in the main of minor importance, through more changes are made in respect of india-rubber than were involved in the Payne bill as compared with the existing law. The provisions of bill now before the senate, however, is already suggested, cannot be regarded as foreshadowing the final shape which tariff legislation will take.

The Payne bill left unchanged the rate of duty on manufactures of india-rubber (30 per cent. *ad valorem*), except that rubber sponges were specified separately at 40 per cent., and the old rate on manufactures of gutta-percha (35 per cent. *ad valorem*) was also unchanged. In the senate bill rubber manufactures are raised to 35 per cent., without rubber sponges being mentioned. Rubber tires, however, are specified separately, for the first time, and at a higher rate. The following paragraphs show the successive provisions covering the imposition of duties on imports of automobiles and parts:

In the law of 1897:

107. Articles or wares not specially provided for in this act, composed wholly or in part of iron, steel, . . . and whether partly or wholly manufactured, 45 per cent. *ad valorem*.

In the Payne bill, as proposed and adopted:

140. Automobiles and parts thereof, bicycles and parts thereof and motor cycles and parts thereof, 45 per cent. *ad valorem*.

In the substitute proposed in the senate:

140. Automobiles, bicycles and motor cycles and parts of any of the foregoing, including TIRES, axles and ball bearings, 45 per cent. *ad valorem*.

Imports of insulated wire are not specifically provided for under the existing law, but would be dutiable, under a general provision relating to manufactures of copper, at 45 per cent. This was retained in the Payne bill, but in the Aldrich substitute a new provision is included:

134. . . . telegraph, telephone and other wires and cables composed of metal and rubber, or of metal, rubber and other materials, 45 per cent. *ad valorem*.

The india-rubber trade would be affected by any changes in the rates on elastic webbings, waterproof clothing, and fabrics for waterproofing, but on account of the rather intricate form of the various schedules it may be just as well to defer treatment of those until the new measure becomes a law in its completed form. It may be added, however, that the Aldrich bill raises the duty on card clothing composed in part of rubber.

The free list, in the latest form suggested, contains this item:

587. India-rubber, crude, and milk of, and scrap and refuse india-rubber, fit only for remanufacture.

This reference to scrap, rubber, being without any attempt at description, is much simpler than the present specification, under which many disputes have arisen between importers and the customs authorities.

RUBBER SPONGES AND THE TARIFF.

DURING the recent "hearings" before the committee which formulated the Payne tariff bill, statements were made regarding the higher cost of labor employed in manufacturing rubber sponges

in the United States as compared with the European product, as a reason for demanding a higher rate on such goods than the general rate of 30 per cent. on rubber manufactures. One demand was for 50 per cent. *ad valorem*.

In one of the newspapers the representatives of European rubber sponge manufacturer claiming to sell nine-tenths of the rubber sponges imported into this country states that since 1903, when no rubber sponges of domestic manufacture were sold, their trade has decreased in each successive year as domestic competitors have been able to put on the market an article which is a substitute for the foreign product. The importer referred to intimates that nine-tenths of the rubber sponges made in the United States are the product of a single factory and it is interesting in this connection to note that American rubber sponges are being advertised extensively in Germany, in which country, by the way, such goods were manufactured at an earlier date than in the United States.

NO TARIFF YET ON WASHED RUBBER.

AN importation made by the Michelin Tire Co. at New York was assessed for duty at 30 per cent. *ad valorem*, the regular rate for manufactures of india-rubber. Protest being made, the United States general appraisers decided:

"It appears that the rubber involved has been washed and some of the impurities removed therefrom before importation, but the evidence satisfactorily establishes that such washing and consequent elimination of impurities had not changed the condition of the rubber from the crude state. It is not in any sense a manufacture of rubber, nor has it been prepared for any special use, and we therefore sustain the claim for free entry under paragraph 579" [of the Tariff act of 1897].

The date of these proceedings is not published by the government, but it is inferred that the action of the port collector against which Messrs. Michelin protested was prior to THE INDIA RUBBER WORLD's recent article [January 1, 1909—page 121] on the subject of the tariff as related to crude rubber.

RECLAIMED RUBBER ALSO FREE.

ANOTHER protest made recently by the Michelin Tire Co. related to an importation of rubber which, it appears, the collector at New York assessed for duty as "manufactures of india-rubber." The board of general appraisers, to whom appeal was made, decided that, whereas the merchandise in question had at one time been in the form of manufactured articles, "it had again been reduced to the crude state, and as it is the condition of merchandise as imported which must control in settling the classification, and thus the claim for free entry of this rubber must be sustained." Elsewhere in the decision this rubber is described as having been "reclaimed or recovered from old scrap, boots and shoes and automobile tires."

* * *

THE government announces the allowance of a drawback on the exportation of rubberized leather manufactured by the Vigori Leather Co. (New York), from imported leather, equal in amount to the duty paid, less 1 per cent.

AMONG the amendments to the Mexican tariff schedule which became effective on February 15 is the inclusion of india-rubber tires for vehicles, with or without leather parts, as a separate item, the rate being .66 peso [= 33 cents, gold] per kilogram, net weight. The rate on articles of india-rubber, gutta-percha and celluloid not specifically mentioned remains unchanged—.45 peso [22½ cents] per kilogram, gross weight.

Rubber Goods Manufacturing Co.'s Annual.

THE tenth annual meeting of the shareholders of the Rubber Goods Manufacturing Co., a corporation of New Jersey, was held at the registered offices of the company in Jersey City, on Thursday, April 8. The annual reports of the officers of the company were read and approved, and are given here in full form.

PRESIDENT WATSON'S REPORT.

TO THE STOCKHOLDERS OF THE RUBBER GOODS MANUFACTURING Co.: In this, the tenth, annual report of your company, it is our purpose to furnish to our stockholders information somewhat more full than in former years, giving in place of the usual statements, a consolidated statement of assets and liabilities of the Rubber Goods Manufacturing Co. and its subsidiary companies, showing their condition as of December 31, 1908, and also a consolidated income statement of the company and its subsidiary companies showing the operations to December 31, 1908.

For the year 1908, the total sales as compared with 1907,

showed a decrease of less than 14 per cent. The earnings were \$2,203,519.19 as compared with \$2,371,827.44 for 1907, a decrease of about 7.1 per cent. Thus it appears that while the volume of the business of your company has been affected during the year by general conditions existing throughout the country, the profits have not been correspondingly decreased.

The larger part of the decrease in sales in 1908 was due to a falling off in the railroad demand for air-brake hose, steam hose and other material, a demand which recently has decidedly improved.

The automobile tire business increased, the sales having been the largest of any in the history of the company, and a still larger volume for the year 1909 is indicated by the present condition of orders. Owing to the greater demand for our tires, it has been necessary to enlarge the capacity of the plants where the "Hartford," "Morgan & Wright" and "G & J" tires are manufactured, and we are confident that the tires manufactured by these companies continue to be the best on the market.

All of the plants of the company have been maintained in excellent condition, and in many instances extensive improvements and additions have been made.

The selling organization of the United States Rubber Co. has been utilized to a greater extent than previously, and the volume of goods distributed through this channel has largely increased, with indications that in the future the company will derive greater benefits from this source.

The regular quarterly dividends of 1¼ per cent. have been paid on the preferred stock and four dividends of 1 per cent. each, have, during the year, been paid on the common stock.

It is my sad duty to report the loss sustained by your company in the death of our late president, Charles H. Dale, which occurred on July 18, 1908. Mr. Dale had for many years been a conspicuous figure in the rubber goods industry, having achieved great success in the organization and management of The Peerless Rubber Manufacturing Co., one of the subsidiary companies of the Rubber Goods Manufacturing Co. Mr. Dale was one of the original incorporators of your company, and on April 14, 1903, was elected its president, holding the office until the time of his death. Respectfully submitted,

JOHN J. WATSON, JR., President.

Jersey City, New Jersey, April 8, 1909.

TREASURER'S REPORT.

CONSOLIDATED GENERAL BALANCE SHEET DECEMBER 31, 1908.

ASSETS.

Property, plants and investments.....	\$23,505,177.76	
Patents and trade marks (less charged off for depreciation)	2,369,787.58	
Inventories, manufactured goods and materials	\$6,996,189.86	
Cash	907,365.39	
Bills and accounts receivable....	3,322,828.82	11,226,384.07
Securities owned.....	\$5,137.00	
Stock owned in Gen'l Rubber Co.	1,000,000.00	1,005,137.00
Total assets.....	\$38,106,486.41	

LIABILITIES.

Capital stock, preferred	\$10,351,400.00	
Capital stock, common.....	16,941,700.00	\$27,293,100.00
Bonds of Mechanical Rubber Co. and New York Belting and Packing Co., (less amount owned)	939,510.00	
Bills and accounts payable.....	2,690,724.61	
Sinking fund for bonds.....	515,038.47	
Fixed surpluses (subsidiary companies).....	2,499,218.65	
Surplus	4,168,894.68	
Total liabilities.....	\$38,106,486.41	

Of the above "surplus" minority stockholders in two companies would be entitled to \$100,951.68.
The contingent liability for certain guarantees, which are offset by corresponding contingent assets, is not included.

CONSOLIDATED INCOME STATEMENT FOR THE YEAR ENDING DECEMBER 31, 1908.

Net sales for year 1908.....	\$18,491,987.90	
Earnings subsidiary companies for year ending December 31, 1908.....	\$2,203,519.19	
Less:		
Expenses, home office (9 months) ..	\$51,175.99	
Maintenance and repairs.....	104,335.37	
Sinking fund for bonds.....	63,424.66	\$218,936.02
Net profits.....	\$1,984,583.17	
Dividends	1,051,699.50	
Surplus for period.....	\$932,883.67	
Surplus and working capital March 31, 1908..	4,446,211.35	
	\$5,379,095.02	
Amounts charged off for depreciation of plants, patents, etc.....	1,210,200.34	
Surplus and working capital December 31, 1908	\$4,168,894.68	

The annual election resulted in the board of directors being continued without change, except that Samuel Norris succeeded the late Charles H. Dale. On April 15 the resignation of Mr. Norris was accepted, and Homer E. Sawyer, general manager of the United States Rubber Co., elected in his stead. The board now stands: Anthony N. Brady, Ernest Hopkinson, Lester Leland, Samuel P. Colt, Charles A. Hunter, Homer E. Sawyer, Frank W. Eddy, Arthur L. Kelley, John J. Watson, Jr.

At a meeting of the board, held on April 8, at No. 42 Broadway, New York, the following were reelected officers of the company: John J. Watson, Jr., president; Lester Leland and Charles A. Hunter, vice-presidents; Thomas H. Lee, treasurer; Samuel Norris, secretary, and John D. Carberry, assistant treasurer and assistant secretary.

The financial reports were audited by Henry T. Bragg, C. P. A.

ECUADOR.—The United States consul general at Guayaquil reports that the amount of rubber exported from Ecuador in 1907 was 1,031,510 pounds, of which 816,684 pounds was sent to the United States.

Recent Patents Relating to Rubber.

UNITED STATES OF AMERICA.

- NO.** 913,720. Apparatus for vulcanizing. J. R. Gammeter, Akron, Ohio, assignor to The B. F. Goodrich Co.
 913,819. Resilient wheel. R. Gaignard, Paris, France.
 913,850. Air tube of tires. J. Rees, Cardiff, England.
 913,897. Tire tool. W. James, Birkenhead, England.
 913,917. Belt for conveyers. T. Robins, New York city.
 913,950. Coupling. [For airbrake hose.] E. E. Gold, New York city.
 913,962. Elastic grip band for packages. W. Liddy, Brooklyn, N. Y.
 914,036. Cushion tire for vehicle wheels. B. F. Fry, La Crosse, Wis.
 914,141. Protective device for rubber tires. H. W. Harding, New York city.
 914,156. Apparatus for treating rubber. [Latex is placed within a revolving drum, into which smoke is introduced.] Enrique Molina, Lima, Peru.

Design Patent.

- 39,862. Rubber overshoe. F. C. Hood, Boston, assignor to Hood Rubber Co.

Trade Marks.

- 39,592. The Vulcanized Rubber Co., New York city. The word *Conqueror*. For hard rubber combs.
 39,624. Mulconroy Co., Philadelphia. The words *7 League*. For rubber footwear.
 39,700. The American Mfg. Co., Charleston, W. Va. The word *Eagle*. For packing for pipe joints.

ISSUED MARCH 9, 1909.

- 914,381. Locking ring for wheel rims. R. S. Bryant, Columbus, Ohio, assignor to The Bryant Steel Wheel and Rim Co.
 914,477. Rubber shoe attachment. H. J. Bracken and W. C. Ward, Norwalk, Conn.
 914,551. Wheel tire. [Relates to a rim for pneumatics.] J. Christy, Akron, Ohio.
 914,559. Vehicle tire. W. D. McNaull, Toledo, Ohio.
 914,634. Belt coupling. J. Brenner, assignor of one-half to J. W. Clark, both of Philadelphia.
 914,650. Vehicle wheel. [Elastic—composite—not pneumatic.] J. E. Harrod, Indianapolis, Ind.
 914,674. Internal cushion for boots and shoes. J. Ramsay, Sydney, New South Wales.
 914,710. Vehicle wheel. [Pneumatic tire and special rim.] P. Ebner, Columbus, Ohio.
 914,712. Anti-skidding device for wheels. E. C. Gardner, Montreal.
 914,810. Removable rubber heel. J. H. Dempsey, Cleveland, Ohio.
 914,844. Wheel. [Special construction, from the hub out; rubber tire.] J. C. Jackson, Xenia, Ohio.
 914,905. Vulcanizer. [The drawing in the printed specification shows the device adapted for pneumatic tires.] J. K. Williams, Akron, Ohio, assignor of one-half to The Williams Foundry and Machine Co.

ISSUED MARCH 16, 1909.

- 915,069. Tire case. F. E. Bowers, New Haven, Conn.
 915,265. Spare tire case. *Same*.
 915,304. Vehicle wheel. [With demountable rim for rubber tires.] T. Midgley, Columbus, Ohio.
 915,457. Swimming shoe. L. Marotte, Baker City, Ore.
 915,585. Vehicle wheel. [With solid rubber tire and springs for adding resiliency.] C. W. French, Kingfield, Me.
 915,713. Anti skidding tire attachment for wheels. H. H. Frey, Boston, assignor to Iver-Johnson Sporting Goods Co.

Trade Marks.

- 33,169. Feodor Burgmann, Dresden, Germany. The words *Burgmann's Packungen* (in German text). For fibrous packings.
 38,824. Consolidated Packing and Supply Co., New York city. The word *Consolco*. For packings, hose and belting.

ISSUED MARCH 23, 1909.

- 915,830. Attachment for tire treads. [Consists of metallic links.] F. A. Fox, assignor to Fox Metallic Tire Belt Co., both of New York city.
 915,840. Tire tread attachment. *Same*.
 915,841. Attachment for tire treads. *Same*.
 915,842. Attachment for tire treads. *Same*.
 915,843. Anti-skid device for tires. *Same*.
 915,884. Resilient wheel. F. J. Pothe, Hamburg, Germany.
 915,918. Patch for vehicle tires. O. W. Wiles, Oakland, Cal.
 915,954. Pneumatic tire mounting. C. G. Hawley and E. K. Baker, Chicago.
 915,985. Hose coupling. S. Medovarski, Cleveland, Ohio.
 916,076. Hose coupling. E. W. Whitmore, Lynn, Mass.
 916,122. Vehicle wheel [of special construction, with rubber tire]. W. J. Doyle, Evanston, Ill., assignor of one-half to J. M. Collins, Chicago.
 916,136. High pressure hose. [For fire service.] T. B. Ford, New York city.
 916,211. Bicycle pump. C. E. Speck and F. W. Henschen, St. Marys, Ohio.
 916,264. Tire. [Solid rubber, with springs underneath.] R. R. Brown, Livermore, Cal.
 916,350. Heel cushion for boots or shoes. A. A. Meyer, Quincy, Mass.

Trade Mark.

- 26,658. E. C. Marks, Chicago. The word *Perfection*. For combination metal and rubber bottle stoppers.

ISSUED MARCH 30, 1909.

- 916,440. Resilient tire. J. Guetton, La-Tour-de-Millery, France.
 916,678. Automobile tire. B. R. G. Darré, New York city.
 916,750. Horseshoe pad. M. M. Mills, New York city.
 916,784. Vehicle tire. [Pneumatic, with means inside for supporting the wheel in case of puncture.] B. Ross, Buffalo, N. Y.
 916,805. Gasket or packing. C. H. Van Nostrand, Orange, N. J.
 916,858. Device for coupling, uncoupling, and manipulating air brake hose. C. Geisking, Harrisburg, Pa.

Trade Marks.

- 38,128. The Arlington Co., New York city. The word *Challenge*. For rubber collars and cuffs.
 40,126. The Manhattan Supply Co., New York city. The word *Mansco*. For asbestos packing.
 40,662. The Peerless Rubber Mfg. Co., New York city. The word *Acme*. For valves.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each postpaid.]

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the application, which in the case of these listed below was in 1907.

*Denotes Patents for American Inventions.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, MARCH 10, 1909.]

- 24,210 (1907). Tire having an air tube and a tread of unconnected tread blocks of wood covered with rubber. R. Haddon, London.
 24,271 (1907). Circumferentially divided rim for tires, held together by a special clip. D. A. Prust, London.
 *24,487 (1907). Tire cover fabric. J. F. Palmer, Chicago, Illinois.
 24,719 (1907). Tire cover made as thin as possible, and of an even thickness, and provided with a stitched-on foundation tread, to which a renewable tread is riveted or cemented. F. F. Kerr, Broad Green, Liverpool.
 24,582 (1907). Elastic tire formed of a series of india-rubber studs, held in the rim by embedded springs. R. Basch and S. Basch, London.
 24,594 (1907). Tire inflating pump driven by the motor car. W. H. Newman, Totteridge Park, Herts.
 24,700 (1907). Pessary. L. Willmott, London.
 [ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, MARCH 17, 1909.]
 24,849 (1907). Mud guard for motor car wheels. J. Varet and C. Finaly, London.
 24,868 (1907). Security bolts for tire rims with detachable flanges. C. B. Cave-Browne-Cave, London.
 24,895 (1907). Side slipping device. S. W. Newcomb, London.
 24,938 (1907). Means of holding detachable rims to the permanent rim of vehicle wheels. H. W. Morley and W. Jackson, Bradford.
 25,018 (1907). Side slipping device for vehicle wheels, consisting of a series of spikes. J. H. Hall, Sheffield.
 25,068 (1907). Wheel having a solid rubber tread and provided with additional resiliency by means of a felloe being made hollow so as to serve as an air chamber. B. A. Godek, Paris, France.
 25,071 (1907). Plastic composition for use as a rubber substitute for a tire filler; consists of glycerine, water, gelatine, and a mixture of formaldehyde and talc, to which potassium chromate may also be added. M. Bartels, Wiesbaden, Germany.
 *25,085 (1907). Resilient wheel provided with a hollow rubber tire and a hollow felloe which rests upon a pneumatic tube. C. G. Lotave, Denver, Colorado.

- 25,091 (1907). Method of and apparatus for separating vulcanized rubber from fibrous and other materials. W. Grummel, Behrenbostel, Germany.
 25,098 (1907). Heel protectors. W. White, North Fitzroy, Victoria.
 25,149 (1907). Revolvable heel protector. A. Haste, Bradford.
 25,284 (1907). Flange for motor car wheels adapted to carry a spare wheel. T. M. Davies, and Stepney Spare Motor Wheel, Ltd., Llanelli.
 25,291 (1907). Wheel designed to enable spokes to be removed without interference with the felloe where the tire is permanently fixed to the rim. E. Shearing and J. Liversidge & Son, London.
 25,302 (1907). Rubber insole to render shoes waterproof. H. A. Silver and H. C. C. Silver, London.
 25,321 (1907). Tire cover with non-skid studs. J. O'Brien, Wimbledon, Surrey.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, MARCH 24, 1909.]

- 25,481 (1907). A resilient wheel having a solid rubber tread and inside of which is a pneumatic feature. J. Donkin, Bournemouth.
 25,541 (1907). Resilient ball for filling tires and means for forcing the same through the valve device. F. Fuchs, Bad Landeck, Silesia.
 *25,621 (1907). Machine for winding insulated thread to form tire casings. E. D. C. Bayne and L. A. Subers, Cleveland, Ohio.
 25,635 (1907). Wheel with flexible tread band resting upon a flanged felloe and having a leather cover. S. Marvasi, Naples, Italy.

- 25,678 (1907). Tire rim with one side detachable and held in place by a split ring. W. Turner, Manchester.
- 25,702 (1907). Tire prevented from puncturing by means of a filling compound placed between the air tube and cover. W. Hesketh-Bamford, Greenhithe, Kent.
- 25,736 (1907). Wheel with solid rubber treads, and inner and outer rims between which are helical springs. R. Allan and G. Knowling, Brentford.
- 25,816 (1907). Puncture preventing lining for tire covers consisting of paper strips with interposed layers of rubber. P. L. V. Gaultier, Versailles, France.
- 25,986 (1907). Diaphragm for tire tubes on both sides of which communication is established with the air valve; in case of puncture of the tread the diaphragm is made to occupy the whole of the air space. A. Garneau, Paris, France.
- 26,020 (1907). Pneumatic tire provided with an internal cushion adapted to take the weight of the vehicle on deflation of the tire. P. E. Doolittle, Toronto, Ontario.
- 26,044 (1907). Tires in which volute springs support flexible tread bands. H. Gottwald and G. Haubold, Berlin.
- 26,067 (1907). Non-skid device for tires. G. T. Turner, London.
- 26,072 (1907). Pneumatic cover for bicycle saddles. C. H. Proctor, Mexboro, Yorkshire.
- 26,077 (1907). Non-skid device for tires, comprising leather gaiters provided with steel caulks. E. C. R. Marks, London. (Neckarsulmer Fahrradwerke A.-G., Neckarsulm, Germany.)
- [ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, MARCH 31, 1909.]
- 26,097 (1907). Pneumatic tire with special tread and mold for forming the same. H. Walker and E. Walker, Bradford.
- 26,257 (1907). Cushion tire for vehicles. T. Lawson, Newton, Carlisle.
- 26,273 (1907). Method of securing the detachable flange of a tire rim. E. Weiler, Berlin.
- 26,377 (1907). Boots rendered waterproof by means of an inner backing for the soles of rubbered canvas. C. Furness, Cowes.
- 26,370 (1907). Tire inflating pump to be attached to a motor car. A. J. E. Daffrin, Dieppe, France.
- 26,412 (1907). India-rubber substitute. L. Roland, Paris, France.
- 26,446 (1907). India-rubber substitute. To a mixture of glycerine, gelatine, sugar and chromic acid or chromates is added enough rubber solution to form one-tenth of the mass. Linseed or rape oil may be added. Same.
- 26,556 (1907). Tire tubes made in one straight length with inclined ends. H. Rodgers, Bloemfontein, South Africa.
- 26,627 (1907). Vulcanizer for long strips, belts, rods or the like, of india-rubber or gutta-percha. W. D. Gratana, Rijswijk, Holland.
- 26,629 (1907). Pneumatic tire having chains in circumferential grooves in the tread. S. G. Anderson, Sydney, Australia.
- 26,749 (1907). Detachable rim for pneumatic tires. R. Kronenberg, Ohligs, Germany.
- 26,750 (1907). Detachable rim for pneumatic tires. Same.

THE FRENCH REPUBLIC.

PATENTS ISSUED (with Dates of Application).

- 395,043 (Aug. 19, 1908). E. Cleathers. Air tubes for pneumatic tires.
- 395,035 (Dec. 16, 1907). E. Decauville. Press for tire and tire tube repairs.
- 395,198 (Oct. 13). Hookham. Protective tire.
- 395,216 (Dec. 20, 1907). C. E. Defer. Elastic tire.
- 395,217 (Dec. 20). P. Robin. Protective tire.
- 395,101 (Oct. 9, 1908). M. Wilderman. Process for the manufacture of hard rubber capable of resisting the action of gas.
- 395,181 (Oct. 12). T. Cockerill. Improvement in the treatment of rubber.
- 395,214 (Dec. 20, 1907). Wallace and Reynand. Process for the manufacture of elastic and plastic substances.
- 395,215 (Dec. 20). Same. Process for the manufacture of substances analogous to india-rubber and gutta-percha.
- 395,286 (Oct. 15, 1908). Michelin et Cie. Light metallic wheel with multiple pneumatic tires.
- 395,389 (Oct. 16). A. W. Torkington. Elastic tire.
- 395,394 (Dec. 24, 1907). L. Le Boeuf. Automatic wheel.
- 395,505 (Oct. 20, 1908). F. Toukien. Composition for replacing rubber, and the process for its preparation.
- 395,556 (Dec. 31, 1907). L. Absire. Protective rivets for tire treads.
- 395,607 (Oct. 23, 1908). Hébrard. Protective tire treads.
- 395,636 (Oct. 24). R. Klein. Pneumatic wheel.
- 395,668 (Oct. 26). A. Weit et Cie. Extensile mill for the manufacture of tires and tubes.
- 395,812 (Jan. 7). M. Hermander. Machine for the manufacture of pneumatic tires.
- 395,829 (Oct. 30). L. Liais. Pneumatic tires.
- 395,904 (Nov. 3). Keller, junior. Valve for tires.
- 395,918 (Jan. 7). C. Gauthier. Tread for pneumatic tires.
- 395,998 (Nov. 6). Basch. Vehicle tire.

[NOTE.—Printed copies of specifications of French patents may be obtained from R. Bobet, Ingenieur-Conseil, 16 avenue de Villier, Paris, at 50 cents each, postpaid.]

"AIDS TO SHIPPERS" (copyright, 1908), received with the compliments of Messrs. Oelrichs & Co., of New York, is designed to be of value to all who are interested in the export and import trade. There is a variety of information, including tables of American money compared with foreign, and also comparative tables of weights and measures, equally useful to business men whether in foreign trade or not.



PONCHO WORN IN COLOMBIA.

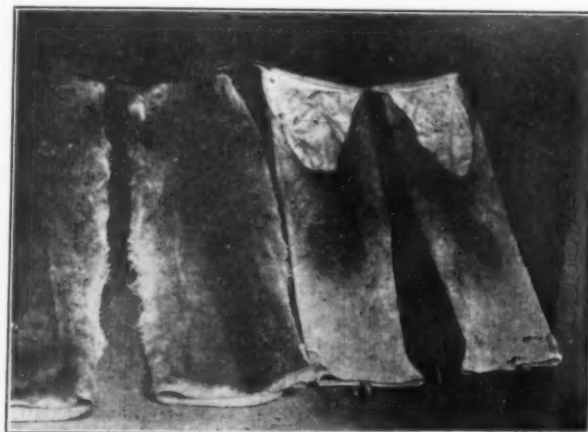
RUBBER CLOTHING IN COLOMBIA.

THE market for waterproof garments in Colombia is reported good by the United States consul general at Bogotá, on account of the fact that so much travel must be done on horseback and heavy tropical rains are so frequent. The importation of ponchos at Barranquilla alone is about 16,500 pounds in a year, mostly from Great Britain.

Two illustrations herewith, from photographs received recently from Colombia, will give an idea of some of the waterproof goods for which a demand exists. The first shows a poncho, worn by a man on horseback, which is quite like the model used in the American cavalry; "light weights" are preferred.

The second picture shows a garment which the natives wear to protect their legs from cold and rain while riding—long, loose, over trousers made of leather of skins, or of heavy "mackintosh" stuff. These "zamarres" are cut very large and of nearly even width in the legs, the latter being hung independent of each other on a belt. They are sufficiently long and large enough to cover and protect the feet of the riders when mounted.

The following firms in Bogotá are mentioned as merchants who handle waterproof goods more or less: Luis Vargas & Co., Abe!lo Hermanos, Restrepo Hermanos, Echeverri Hermanos, Quijano Wallis & Co., William Droscher, R. Cueto & Ca.



WATERPROOF GARMENTS IN COLOMBIA.

The Late Edmund D. Cook.

ALL Trenton felt a shock on hearing the news, on the morning of April 19, of the death of Edmund D. Cook, which was caused by his being thrown from a spirited horse he was riding in Calwalader Park. The estimation in which he was held in the city of his residence was evinced not only by the closing of the important manufacturing establishments in which he was a director, but in the half-masting of the flags on the city hall and on many other buildings, the calling of a special meeting of the Chamber of Commerce and a meeting of the leaders in the rubber trade in which he figured to so important an extent.

Edward Dunham Cook was born August 12, 1868, at Trenton, but most of his boyhood was spent in Princess Anne, Maryland, where he received his early education. Mr. Cook's business career began at Trenton in the office of the old pottery concern of Alpaugh & Magowan. Soon afterward he became identified with what was then the Empire Rubber Co., of Trenton, one of the incorporators of which was his brother, George R. Cook. Later he assisted his brother in forming the Trenton Oilcloth and Linoleum Co., of which he was treasurer at the time of his death. At the end of 1897 Mr. Cook assisted in reorganizing a rubber business in Trenton which became incorporated under the name Hamilton Rubber Manufacturing Co., and he thereafter filled the office of president. In 1902, the Cook interests having withdrawn from the Empire Rubber Co., already mentioned, a new company was formed, now called the Acme Rubber Manufacturing Company, in which the subject of this sketch has been always an active director, his brother being president. Mr. Cook was also president of the Combination Rubber Manufacturing Co. (Bloomfield, N. J.), which in 1906 came under the control of the Hamilton company.

In addition to the business connections mentioned already, Mr. Cook filled the office of treasurer of the Standard Inlaid Manufacturing Co. He was also second vice president of the Mercer Trust Co. and a director in the Trenton Trust and Safe Deposit Co. and the Trenton Hall and Building Association. He thus sustained an important relation not only to the india-rubber industry but to financial affairs generally in his city and state. The most important position of all to which he was called was the presidency of the Trenton Chamber of Commerce, which he accepted under protest, on the ground that he might not be able to devote to it the necessary amount of attention, but once having entered upon the duties of the office no one could have been more assiduous than he in fostering the interests of the organization. Indeed, all who came into contact with him in this position testify to the ability which he displayed in it.

But Mr. Cook had time for affairs other than those of business. He was, for instance, a trustee of the Mercer Hospital and a director in the Young Men's Christian Association. The social side of his life showed no less activity than was illustrated in his business career. He was a member of numerous clubs—Trenton Country, Union League of Philadelphia, Meadowbrook Gun and so on and of Loyal Lodge No. 181, Free and Accepted

Masons. He was accustomed to go South every year on a hunting trip, and meanwhile he found much pleasure in horseback riding, the recreation which resulted so tragically.

Mr. Cook's domestic life has been described as ideal. He married Miss Margaret Parsons and the home which they builded was the scene of a delightful hospitality. Four children survive. Mr. Cook was the son of Mr. and Mrs. Edmund Burroughs Cook, who still live in Trenton. He is survived also by two brothers and a sister, Charles Howell Cook, president of the Cook Pottery Co.; George R. Cook, president of The Acme Rubber Manufacturing Co., and Mrs. J. Russell Beekman.

The funeral of Mr. Cook was well in keeping with his simple, unostentatious life. While the home of the deceased was thronged with probably the largest representation of prominent men of Trenton that ever gathered to do honor to the dead, the obsequies were of the simplest character, and every detail of the

arrangements was devoid of display. Services were conducted by the Rev. Hamilton Schuyler, of Trinity Church (Episcopal). The honorary pall bearers were men of prominence in the social, business and professional circles of Trenton. The floral tributes surpassed in beauty and number any that had before been seen at a funeral in that city.

Edmund D. Cook was one of the most capable of the younger men in the rubber trade. Although by temperament conservative and absolutely free from ostentation and advertisement of self, he was quietly aggressive, of remarkable executive ability and broadly capable as the creator and sustainer of great enterprises. Few men of forty have so quietly and so successfully built up and administered so many companies and done it with so little apparent effort. With all of his attention to the details in the rubber mills, the great linoleum plants, the banking and other enterprises in which he was a vital force, he had plenty of time for home life, and was a welcome and interested member of the club and social life in the city that now mourns his loss. The rubber trade of Trenton, and indeed of the country, have

lost one whom, had a brief score of years more been his allotment, would have loomed large as one of the leaders in it, and one who could have been relied upon always to follow a policy of sanity, justice and probity.

TRIBUTE OF THE TRENTON RUBBER TRADE.

A meeting of the rubber manufacturers of Trenton was held at noon, Tuesday, April 20, at the Chamber of Commerce building, as a formal mark of respect on account of the tragic death of Mr. E. D. Cook, who until the morning of his death was so actively engaged in the welfare of the manufacturing, banking and business interests of Trenton, and prominent in the work of civic improvement, to which latter effort he has at great self-sacrifice devoted himself so recently. The following companies were represented:

Empire Rubber Manufacturing Co. }	Gen. C. Edward Murray.
Crescent Belting and Packing Co. }	
Whitehead Brothers	Mr. Samuel Cadwalader.
Joseph Stokes Rubber Co.	Mr. H. L. Boyer.
Trenton Rubber Manufacturing Co.	Mr. Fred S. Wilson.
Home Rubber Co.	Mr. Charles E. Stokes.
Luzerne Rubber Co.	Mr. Bruce Bedford.



EDMUND DUNHAM COOK.

Essex Rubber Co.....	Mr. C. H. Oakley.
Mercer Rubber Co.....	Mr. J. E. Clancy.
Acme Rubber Manufacturing Co.....	Mr. I. H. Lambert.
Hamilton Rubber Manufacturing Co.....	Mr. W. S. Blodgett.
United and Globe Rubber Mfg. Cos.....	Mr. W. H. Linburg.
Woven Steel Hose and Rubber Co.....	Mr. John S. Broughton.
	Mr. J. Russell Kelso.

Mr. W. H. Linburg presided, with Mr. C. H. Oakley as secretary. Mr. Bruce Bedford was appointed as chairman of a committee to provide a suitable floral tribute to the memory of Mr. Cook. It was unanimously resolved that the rubber mills of Trenton close at noon on the day of the funeral, Thursday, April 22.

A committee composed of Mr. W. W. Blodgett and Mr. C. H. Oakley was instructed to provide for the proper engrossment of a set of resolutions expressing the keen sense of regret on the part of the rubber manufacturers of Trenton at the loss of their fellow manufacturer, and conveying to his family their tribute of sympathy, one copy to be sent to the family and one copy to be tendered the Chamber of Commerce.

It was resolved that a copy of the minutes of the meeting be mailed to each rubber manufacturer.

THE OBITUARY RECORD.

ZIBA C. KEITH.

ZIBA CARY KEITH, who died at his home in Brockton, Massachusetts, on April 5, was a leading citizen of that place. He was the first mayor of Brockton, which position he filled for several terms, rendering the city a notable service. At various times he served in both branches of the Massachusetts legislature, and in several municipal offices other than the mayoralty. He was a director and treasurer for more than a dozen years of the Monarch Rubber Co., organized by John Thomas Robinson in 1892 to conduct a proofing business, and incorporated in 1893. Mr. Keith was also a director in several banks and other corporations. He was born July 13, 1842, and married in 1865 to Miss Jackson, who survives with one son.

JAMES CONNOLLY.

THE death of JAMES CONNOLLY, manager of the druggists' sundries department of the Mechanical Rubber Co., occurred on March 30, at his home in East Cleveland, Ohio. Mr. Connolly



JAMES CONNOLLY.

was a young man, not yet 37, but had been identified with the rubber business for many years, having started as office boy with the Cleveland factory in 1885. By great industry and strict

attention to duty he succeeded in working his way to the front, as well as into the hearts and confidence of all with whom he came in contact. Stricken by tuberculosis four years ago, he lived for a time in Arizona in the hope of recovering his health. He was laid away to rest in beautiful Lakeview cemetery on April 1, mourned by his associates, and followed to the grave by a large number of employees of the factory. A wife and two children survive him.

JACOB NEUMAN.

JACOB NEUMAN, who died at his home in Cleveland, Ohio, on March 27, in his forty-third year, was vice-president of the Stein Double Cushion Tire Co., of Akron, of which he was one of the founders in 1901. He had filled the same office in the company since the beginning, just as Charles K. Sunshine has been president continuously. For several years Mr. Neuman filled also the office of general manager of the Stein company, and spent most of his time in Akron. The funeral services at Cleveland on March 29 were attended by a delegation of the Akron office staff. A brother of the deceased, M. M. Neuman, is secretary and treasurer of the Stein company.

NO GUAYULE COMBINATION.

TO THE EDITOR OF THE INDIA RUBBER WORLD: On the 10th of this month a report was published in a number of newspapers in this city and abroad, purporting to come from Mexico City, to the effect that Messrs. Madero & Co. had sold their guayule interests to the Continental Rubber Co. for \$15,000,000. I was quite sure that there was no truth in the report, but telegraphed immediately to Mr. Ernesto Madero, who replied at once that it was a pure fabrication, and also telegraphed to the Associated Press here asking them to make a denial. There have never been any negotiations for the sale of Messrs. Madero's guayule interests, and there is not the slightest reason to think that such a sale will ever take place. As I have had numerous inquiries from rubber factories in this country inquiring about the correctness of this report, I would thank you to inform the trade through your paper that there is no truth in it.

ED. MAURER.

[Representative of Madero & Co., Mexico.]

New York, April 19, 1909.

[Inquiry at the offices of the Continental Rubber Co., in New York, brought a firm denial of any knowledge of a combination of interests of that company with any other.]

THE AGE OF EXPOSITIONS.

IT is plain from reading the *Journal des Expositions* that the era of national and international exhibitions is not over. Founded 67 years ago, this journal continues to chronicle existing and to advise in regard to prospective exhibitions, the sum total of which constitutes one of the great educational agencies of modern times. A recent number of the *Journal*, published now in Brussels, has articles on no fewer than 25 exhibitions now being organized, in 14 different countries, in North and South America, Europe, and Asia. The Brussels Exposition of 1910 is, of course, treated prominently. Not least in importance of the enterprises under way is the Alaska-Yukon-Pacific Exposition, to be held at Seattle, United States, from June to October, this year. Damascus is organizing an exposition; so is Quito, and Brazil, Norway, and Russia are on the list. While it does not appear that especial attention is to be given to rubber at any of the prospective exhibitions, except perhaps that at Brussels, rubber is certain to figure largely, in an auxiliary sense, at most of them. This will be true, for example, of the international exposition of aeronautics at Frankfort o/M. this year.

New Rubber Goods in the Market.

A NEW process in the construction of hot-water bottles and numerous other articles of soft rubber involves their formation over a mandrel or core made of material fusible over a low temperature. Two methods of constructing hollow rubber goods having a fixed mechanical strength have been available hitherto: (1) Building them up from sheet rubber and curing in heat, without pressure, the joints consisting of a cemented lap; and (2) leaving an opening or making an incision large enough to permit the removal of the solid and inflexible core or mandrel. A disadvantage inherent in the finish method has been that the cement might weaken under usage, and in the second method that where the opening occurred a weak spot might develop. In the new process the core or mandrel fuses at the same temperature at

sisting qualities in general are stated to be largely increased. This feature is covered by patents.

A RUBBER POLICE CLUB.

ONE of the newest applications of rubber is in a policeman's baton. The outside is soft rubber, of course, and the baton is therefore flexible. It is loaded with sand and shot, to add to the force of a blow. This is the idea of J. T. Gan-non, a member of the police force of Denver, Colorado, to whom a patent has been issued.

JANIN'S TILE.

THE distinctive feature of the rubber tile pattern illustrated is that only form is required for all the pieces therein, which is not true of every interlocking tile. Each side of every piece is formed of a hook-shaped tongue, and a hook-shaped complementary to the said tongue in shape and size, the hook extend-

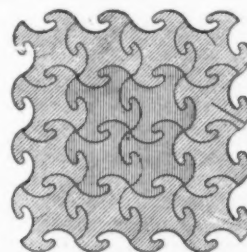


FUSIBLE CORE HOT WATER BOTTLE.

which the rubber vulcanizes, and may be removed from the rubber article in the form of a liquid after vulcanization. Rubber goods may be made to any thickness by this process and reinforced with fabric if desired, and subjected to any necessary pressure of the mold. Heat applied from the outside will cure the rubber all the way through, and at the same time melt the core. The result of applying this process to hot-water bottles, for example, is to produce an article in a single piece, without seams or joints. Tire tubes may be constructed on the same principle, the fusible mandrel being discharged through the air valves. Likewise life preservers, the gas containers of dirigible balloons, and so on. This process has been patented by Frederick J. Gleason, vice-president and general manager of the Massachusetts Chemical Co. (Walpole Rubber Works, Walpole, Mass.), who are manufacturers of the water bottle here illustrated.

NEW NON-SLIPPING RUBBER.

ONE of the features of the Banigan line of rubber footwear which has been introduced this year is a non-slipping characteristic. By mixing steel wool with the rubber compound used for the heels and soles not only is the liability to slipping, even on smooth ice, lessened, but the wear re-



JANIN'S TILE PATTERN.

ing outward and the recess inward, the terminal of the hook of the tongue defining the hook portion of the recess, the tongue and the recess occupying the entire extent of the side. United States patent No. 909,603 has been granted to Albert S. Janin, of New York, for this design.

TAYLOR'S WATCH HOLDING CASE.

THE convenient little device illustrated here is intended for use by motormen on street cars and others who require often to consult their watches, and need therefore to have them convenient of access, without risking the loss of the timepieces. This case is made of gutta-percha and weighs only three ounces. It is fitted with cushions and spring to prevent jarring, and



WATCH HOLDING CASE.

is adjustable to any size of watch. The spring clamp can be snapped instantly onto any part of a car, whereby the motorman can have the time under his eyes constantly, instead of being obliged frequently to draw the watch from his pocket. The retail price is \$1.50. [Taylor Brothers, No. 921 West Superior avenue, Cleveland, Ohio.]

THE "KINDER" TIRE CASE.

THE Hopewell line of tire cases, which have become widely known and have been illustrated in these pages, has been supplemented by a new product—the Kinder case—which is shown in the picture herewith. It is of the button type. The

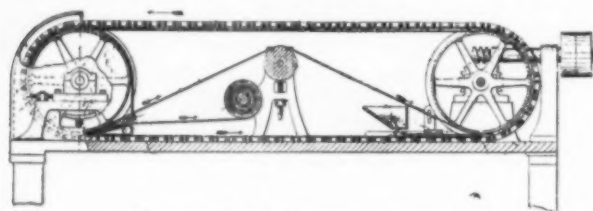
case is made of drill and is held in place by five buttons. It is waterproof and is referred to as being very serviceable. It retails at \$2. [Hopewell Brothers, Cambridge, Massachusetts.]

"PEERLESS EMPIRE" MOTORCYCLE V BELT.

THE manufacturers of the belt illustrated herewith point to the fact that it is the first one of American make to be offered to the trade, while they guarantee it to be as good as anything imported. The illustration shows it in the form in which it is packed for shipping. [Empire Automobile Tire Co., Trenton, New Jersey.]

COATING FABRIC WITH POWDERED WASTE.

THOMAS GARE, a well-known British experimenter, has patented a short cut in the manufacture of rubber plastics. For example, he takes powdered rubber waste, sprinkles it on a fabric which, running over suitable rolls, enters a revolving

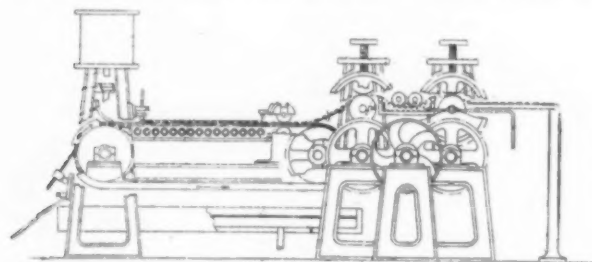


THOMAS GARE'S RUBBER MACHINE.

drum where a rotary surface presses the waste to the desired density, frees it from air, devulcanizes and revulcanizes it, so that it emerges a calendered, vulcanized, finished sheet, with a fabric backing.

COAGULATING LATEX BY ELECTRICITY.

QUITE a novel invention is that shown in the accompanying illustration, which is in brief an endless belt, the upper surface of which is coated with graphite, so that when it is electrified it becomes a continuously moving anode. The cathode made of suitable metal hangs about one-half inch above the surface of the belt. The latex held in the tank shown in



COCKERILL'S ELECTRICAL APPARATUS FOR COAGULATING LATEX.

the picture is allowed to run down upon the slowly moving belt where the current of electricity coagulates it, the water running off into drip pans below. The film of rubber is scraped from the surface of the traveling anode and run through squeezing rolls which expel any surplus moisture. This has been patented by Thomas Cockerill, of Ceylon.

INTERNATIONAL RUBBER EXHIBITION.

IT is stated that the German rubber manufacturers have promised to support the International and Allied Trades Exhibition, which is being organized for London for May, 1911, and the Standige Ausstellungskommission für die Deutsche Industrie, a semi-government affair, have also given their support.

RUBBER PRODUCTION OF PERU.

THE steady increase in the export of rubber from Peru is indicated by some figures kindly supplied to THE INDIA RUBBER WORLD by Señor Don Eduardo Higginson, the Peruvian consul-general at New York, for 4 recent years, during which time the total from Iquitos increased 33 per cent.

As for the grades covered by the following table, compiled by the consul-general, it may be noted that "slabs" and "sausage and balls" are different grades of the rubber known in the United States trade as Caucho and hitherto in some other markets as "Peruvian rubber." In recent years, however, the collection has increased in Peru of rubber of the same grades as Pará, which rubber formerly was described often as "Jebe" (*Hevea*). In the table, therefore, the terms "fine" and "coarse" are Pará rubber, or "Peruvian fine" and "Peruvian coarse," the term Peruvian here having now a different designation than formerly. "Weak rubber" is believed to come from a *Hevea* species in the Peruvian uplands, as distinguished from the trees growing in districts subject to annual overflow of the rivers.

In the table annexed "Pacific ports" include Callao and Mollendo. Values are stated in United States gold. The table fails to include the shipments through Pacific ports in 1904 and 1905:

GRADES.		PACIFIC PORTS.		IQUITOS.	
1904.		POUNDS.	VALUE.	POUNDS.	VALUE.
Slabs		116,312		116,312	\$55,381.90
Sausage and ball.....				2,287,648	1,384,738.85
Weak rubber				42,744	24,286.25
Fine rubber				1,705,748	1,438,021.05
Coarse rubber				661,603	419,138.10
Total				4,814,053	\$3,312,566.15
1905.		POUNDS.	VALUE.	POUNDS.	VALUE.
Slabs				157,733	\$100,135.85
Sausage and ball.....				2,946,797	2,252,036.95
Fine rubber				1,652,633	1,625,672.75
Coarse rubber				727,208	551,770.75
Total				5,484,371	\$4,529,616.30
1906.		POUNDS.	VALUE.	POUNDS.	VALUE.
Slabs	34,102		\$15,606.00	77,506	\$52,845.00
Sausage and ball.....	1,540		350.00	2,845,845	2,232,819.53
Fine rubber.....	121,354		\$5,162.00	1,757,833	1,742,808.65
Coarse rubber	3,899		886.75	739,092	567,782.80
Total	160,895		\$72,004.75	5,420,276	\$4,596,345.95
1907.		POUNDS.	VALUE.	POUNDS.	VALUE.
Slabs	168,087		\$92,221.60	144,804	\$94,445.75
Sausage and ball.....	89,124		41,825.40	2,986,982	2,036,962.00
Weak rubber	7,256		3,298.00	641,014	339,495.85
Fine rubber				1,792,922	1,478,410.60
Coarse rubber	1,146		260.50	830,100	685,945.20
Total	265,613		\$137,605.50	6,395,822	\$4,635,259.40

INAMBARI RUBBER RESULTS.

At the first annual meeting of The Inambari Para-Rubber Estates Limited (London, January 28), the chairman, Sir William Martin Conway, went into detail as to the extent to which preparatory work on the company's properties in Peru had absorbed the energies of the management during their first year, ended June 30 last. They had practically completed the building of the roads required by the government as the price of their concession, and would be in a position shortly to place on the river Inambari the small steamers needed in carrying out the business proposed. The collection of rubber during the first year amounted only to 12,307 pounds, which was sold at a good price. But there were now 200 rubber pickers on the ground and others had been contracted for; the company had stocks of merchandise for use in trading with the natives, and they felt in a position now to carry on extensive operations in rubber gathering in the current year. The rubber referred to is *Hevea*, besides which caucho has been discovered on the estate, and they have also bought some caucho from neighboring properties which are not so well provided with outlets to market. [See THE INDIA RUBBER WORLD, June 1, 1907—page 284.]

THE Gandy Belt Manufacturing Co., Limited—makers of cotton belting for machinery—earned during 1908 net profits of £12,340. Dividends, 7 per cent.

COST OF PLANTATION RUBBER.

THE cost of production of plantation rubber in the Far East is estimated by Mr. Fritz Zorn, of London, at about 1s. 6d. [=36.5 cents, gold] per pound on an average. The Ceylon *Observer* expresses the opinion that in Ceylon, at least, before many years this figure will be reduced one-half. The *Observer* bases its prediction of reduced cost upon the experience of the tea planters, whose crops to-day are so much more economically produced than only a few years ago. The Vogan Tea Co. of Ceylon, Limited, collected last year 28,246 pounds of rubber from cultivated trees, at a cost which they figure out at 10½d. [=21.28 cents] per pound, including cost of tapping knives, upkeep, supervision, and so on, which figure they expect to reduce considerably this year. They have sold their biscuit and sheet rubber ahead at a price equivalent to \$1 per pound, of which they calculate that 81.1 cents will be profit. The Ceylon Tea and Coconut Estates Co., Limited, are referred to as having produced rubber at a still lower cost—9¼d. [=18¾ cents]. Higher costs are reported upon Malaya. Damansara (Selangor) Rubber Co., Limited, report an average cost pound in 1908 of producing their rubber crop to f. o. b. of 1s. 4d. [=30.42 cents, gold]; adding freight, selling expenses and the like, the total cost works out at 18.25d. [=37 cents] per pound.

Commenting on the promise of the Synthetic Rubber Co., Limited, to produce a serviceable synthetic rubber at 1s. per pound, the usually well-informed London *Financier and Bullionist* declares "that this year and in the years to follow the big producing companies in the East [meaning planters] will be able to market an infinitely superior product at considerably lower cost" than a shilling per pound.

The cost of wild rubber continues to be discussed, in comparison with the cost of producing rubber on plantations. Mr. Harrington Edwards writes to the *Financier and Bullionist* that the Galvez Rubber Estates, Limited, operating in Peru, and of which he is a director, during their first year's working, found the cost of production to arrival in the London market to be 1s. 8d. [=40½ cents] per pound. He doubts whether, on the whole, plantation companies will be able to do better, whatever certain ones may accomplish.

The elements which must enter into any consideration of rubber costs are many and varied, rendering comparisons difficult. Up to date little systematic study of costs has been made except on the Eastern plantations which have become large producers. One of the factors in the high cost of crude rubber is the small population of the Brazilian states which produce this material. The most important source of "Pará" rubber to-day is the state of Amazonas, which, by the census of 1908, is found to contain only 249,756 inhabitants, more than one-fourth of whom live in the city of Manáos. The remainder are scattered over 90,928 square miles of territory, or nearly double the area of New York state. Not all of these denizens of the forest are sufficiently civilized even to gather rubber, and of course all the others are not available for such work. Seeing how difficult it is to secure rubber workers from the outside, owing to climatic and certain other conditions, it will readily be understood that a chronic scarcity of labor exists, which prevents any rapid increase in the output of rubber, no matter how attractive may be the prices in the consuming markets.

THE GROWING PLANTATION RUBBER YIELDS.

DETAILS of rubber plantation yields in Ceylon and Malaya given in Zorn & Leigh-Hunt's "Manual of Rubber Planting Companies" afford a basis for some interesting comparisons. These details relate to 61 producing plantations, for 31 of which the rubber yield is stated for two years past—2,306,807 pounds in 1908, against 1,421,970 pounds in 1907. For 16 of the companies the yield is reported, in pounds, for three calendar years, as follows:

	1906.	1907.	1908.
Anglo-American Direct Tea Trading Co.....	22,375	23,994	29,600
Anglo-Malay Rubber Co.....	91,703	224,778	349,450
Bukit Tiga (Selangor) Rubber Co..	23,203	118,982	163,521
Ceylon Tea Plantations Co.....	7,132	13,426	24,000
Consolidated Malay Rubber Estates	32,693	63,615	111,585
Federated Malay States Rubber Co.	13,332	32,175	66,725
Golden Hope Rubber Estate.....	2,400	5,591	15,660
Highlands and Lowlands Para Rubber Co.....	134,285	193,507	210,852
Kepitigalla Rubber Estates.....	28,100	35,064	37,646
Malacca Rubber Plantations.....	17,000	7,619	46,584
Pataling Rubber Estates Syndicate.	43,310	58,064	80,922
P. P. K. (Ceylon) Rubber Estates..	8,305	14,800	29,000
Rosehaugh Tea and Rubber Co....	89,500	153,358	223,470
Selangor Rubber Co.....	70,577	120,524	186,096
Vallambrosa Rubber Co.....	39,113	156,922	225,302
Yatiantota Ceylon Tea Co.....	8,790	5,870	7,500
Total	631,818	1,227,689	1,807,913

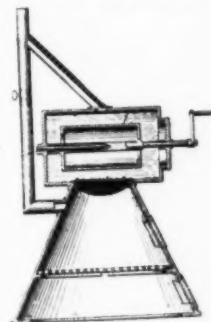
The estimates of yields of rubber plantations, made in advance, have come to be of interest, especially since, as a rule, such estimates are generally exceeded by the actual output. The "Manual" referred to gives the estimated yield in 1909 of 9 companies embraced in the preceding table, the figures comparing as follows with three years past:

	1906.	1907.	1908.	1909.
Pounds.....	458,616	974,158	1,410,113	1,750,000
Inc. over former year..	....	113%	45%	24%

These, and many other equally authentic figures which might be quoted here, indicated that the production of plantation rubber is increasing rapidly, and would seem to justify even enthusiastic predictions as to the further development of the planting interest.

MECHANICAL COAGULATION OF RUBBER.

THE latest application of machinery to the coagulation of rubber latex by smoking is illustrated in the drawing herewith of an apparatus patented by Enrique Molina, of Lima, Peru. The apparatus consists of a rectangular smoke chamber, within which is supported a revolving drum in which is contained the latex to be heated, provided with mechanical means



MOLINA'S RUBBER SMOKING APPARATUS.

for revolving the drum. The whole is supported by a conical base forming a fire chamber, in which the fuel used is placed, and reference is made to means for purifying and cooling the smoke passing from the base into the smoke chamber. The United States patent covering this invention is No. 914,156, dated March 2, 1909.

THE important Neu Guinea Compagnie (Berlin), whose plantations in New Guinea embrace over 2,700 acres in rubber, of various species, report during the business year ending March 31, 1908, that tapping had begun, on a small scale. It is of special interest to note that the product included 2,162 kilograms [=5,486 pounds] of *Castilloa elastica* rubber, of which species they have 667 acres under cultivation.

THE RUBBER TRADE IN SAN FRANCISCO.

BY A RESIDENT CORRESPONDENT.

A CONSERVATIVE estimate of the condition of the rubber trade in San Francisco and the Pacific coast is that business is good enough to prevent complaint from any source, but that the rubber houses are not looking forward to an exceptionally busy year for 1909, though they expect to see busy times soon after. The financial condition has been in suspense for so long that it cannot recover sufficiently to make this an unusually big year for the wholesale rubber houses. Out through the interior the retail establishments have been conducting their business along more conservative lines, and have not been extending very much credit to their customers. For this reason the customers have not bought so freely, and stocks have not been turned over to any great extent. The retailer cannot and has not ordered as heavily as he might otherwise, for that reason, as well as the reason that he has not been given the extensions of credit that he would get in former years. As the orders for the coming season are mostly in, the rubber houses cannot expect a very great revival until the next season opens, but they all assert that each month of this year has shown an improvement and a better tone generally to trade. It has been noticed that this season the mill men have been inclined to patch up their old belting and have bought sparingly of the new. Another feature of the trade has been the demand for the cheaper grades of hose of all kinds.

The Association of Stationary Engineers of California will hold their state convention in San Francisco this year at the big auditorium, and it will also include a mechanics' fair, consisting of machinery and manufactured products of all kinds which will be displayed June 14-19. Most of the rubber factories that have agencies in this city will have exhibits at the fair, and the local factories will make some interesting exhibits of mechanical goods.

Mr. Ellert, traveling man for the Sterling Rubber Co., has returned from an extensive trip through the mill country and the farming communities in the Sacramento valley. He found, he said, that there has been so much snow in the mountains that the mills have not fairly opened, although another traveling man with the firm has been securing big orders from other milling districts. In the Sacramento valley the floods rather paralyzed things so that the sundry business for this trip was quiet. The Sterling company are now putting out the Seamless Rubber Co.'s "Kantleek" tire inner tubes.

Mr. McNeilly, of the Barton Packing and Rubber Co., reports that the firm are in a position to gather in some of the big business which he believes is about due. They have recently installed a large press, they are operating a large new mill, and will have a calender running soon.

Mr. W. O. Franklin, who has traveled for many years for the Boston Woven Hose and Rubber Co. through southern California and Arizona, has left that firm and associated himself with the Gladiator Packing and Rubber Co., of Los Angeles. Mr. Joseph V. Selby, Pacific coast manager of the Woven Hose company, states that trade conditions are becoming more satisfactory.

Mr. L. D. Torrey, son of L. L. Torrey, of the Pennsylvania Rubber Co., states that business is good, and that they have bigger orders booked ahead than they have had at any time within two years. Business, he says, has been especially good in tires, as it seems that the automobile business has been remarkably active this year. Business establishments are finding that they have to buy commercial automobiles to compete with others who are getting them. Mr. L. L. Torrey has accompanied the members of the San Francisco Chamber of Commerce on their trip through the farming sections of the San Joaquin valley.

Mr. Sargent, manager of the Gorham Rubber Co., reports that business is improving right along, and that collections now are very good. This firm is getting a special show room fitted up for the display of a large stock of fire equipment goods. The company have secured a new auto delivery wagon, which makes two they are now using, besides two other automobiles for the use of the salesmen.

Mr. S. L. Plant, president of the Plant Rubber and Supply Co., states that conditions are about normal. Mr. J. L. Plant, father of S. L. Plant, died on April 6 at his home in Retford, England, of which town he was mayor at that time.

J. R. Gates & Co., wholesale dealers in drugs and druggists' sundries, at No. 113 Davis street, have been declared bankrupt, and a sale of the stock of the store has been made by the trustees in bankruptcy.

Mr. Ralph, of the Phoenix Rubber Co., reports that this firm have met with continued success. Mr. Kanzee, of the firm, has devised a new rack which has been satisfactory to such a degree that the firm will place it extensively on the market.

George Sweeney, who is handling the new rubber lines which are being carried by the Eccles & Smith Co., reports that the first month has resulted in a very satisfactory business.

Fred S. Winslow, the new manager of the Pacific Coast Rubber Co., states that they have been working night and day getting things in shape and that business has been very good.

THE RUBBER TRADE AT AKRON.

BY A RESIDENT CORRESPONDENT.

A CONSENSUS of the carload shipments of manufactured commodities in and out of Akron each month was taken recently and has just been announced. It was found that the average monthly shipments by the four largest rubber companies of the city in the latter part of 1908 amounted to 466 cars. This estimate does not include "less carload" business, by which a large part of the rubber companies' shipping is done. The total monthly carload shipments for the city was estimated at 11,000 cars.

At a special meeting of the shareholders of the Goodyear Tire and Rubber Co. on April 12, the capital stock of the company was increased from \$1,000,000 to \$2,000,000. The preferred and common stock are each increased from \$500,000 to \$1,000,000. The meeting was formal and most of the shareholders were represented by proxies. Charles W. Seiberling, vice-president of the company, said that part of the new stock will be placed on the market. The expansion of the trade and manufacturing facilities of the company has made the new issue of stock advisable. At the same meeting resolutions on the death of Byron W. Robinson, late director of the company, were adopted.

Mr. H. S. Firestone, president of the Firestone Tire and Rubber Co., returning from a vacation trip to the South, pronounces the island of Cuba as the most delightful place in America for automobile touring. Its delights are largely due, he says, to the coral stone roads, built by the United States government and now in a process of extension under the direction of the Cuban government. In company with Mrs. Firestone he toured the island as the guest of James Cousins, of the Ford Motor Co.

By way of experiment The Diamond Rubber Co. have been trying a double pneumatic tire on one of their trucks. The idea has come into wide notice since the New York Herald equipped its trucks with imported double pneumatic. Results of the test have not been announced, but it is probable if it does not develop that there is an undue amount of chafing between the tires composing the pair, that the Diamond company will take up their manufacture extensively.

Akron tire manufacturers are little concerned about the prospect of a change in the tariff on automobile tires as contained in the Payne bill. According to a provision by the senate finance committee the rate on tires is made equal to the 45 per cent.

rate on automobiles and other auto accessories. Local men say that the former rate of 30 per cent. was sufficiently high to prevent competition, and that the new rate will make no change in the situation.

In the journal *Finance*, the leading financial authority in the state, the thriving condition of the automobile tire industry in Akron, this city, is mentioned as the basis of the prosperity apparent in this community. Among other manifestations of prosperity mentioned by the journal is the fact that gross passenger earnings of city street car lines show a month by month increase of from 15 to 25 per cent. over last year.

The factory forces of Akron rubber companies are now the largest they have ever been. According to an estimate compiled by the Akron Chamber of Commerce, more than 2,000 additional employes have been added to the forces of the four principal rubber companies since January 1. This increase is distributed as follows: Goodrich, 800; Diamond, 800; Goodyear, 250, and Firestone, 275. The increased number is due partly to the completion of factory additions.

The Diamond Rubber Co. began excavations during the latter part of April for a new office building and laboratory. It will be 148 x 50 feet and three stories high. The laboratory is intended to be the best equipped of any establishment connected with the manufacture of india-rubber in the United States, according to a statement of an officer of the company. The part of the building to be devoted to office purposes will serve merely as an addition to the present office. The company are also planning a new firestone building about 200 x 100 feet. This will be uniform in style with the insulated wire building recently completed.

NEW CABLE SHIP FOR NEW YORK HARBOR.

THE fire control system maintained by the United States government, through the signal corps of the war department, embraces a most important application of submarine telegraphy. It is a system of wires, cables and instruments by means of which an exact sight or aim can be obtained on a vessel some distance from shore, for the purpose of firing upon her. The cables run to several points, at which men are stationed who calculate the distance, speed, etc. This information is telephoned or telegraphed to the adjacent fort, and from the commanding officer to the gun crews. Allowances for speed, distance, and so on, are all calculated to a nicety, the aim is invariably correct and the fire is, therefore, effective. There are now in commission slightly more than 2,000 conductor miles in 212 linear miles of submarine cable, chiefly in connection with the principal fortifications on the Atlantic coast.

There are hundreds of wires in New York harbor alone, liable to constant injury from ocean lines and local shipping as well, and repair facilities are a necessity. There has just been completed for the government a cable ship, to be stationed near New York, which will be put at the disposal of the signal service. This is the *Joseph Henry*, measuring 165 feet over all and 32 feet beam; displacement 500 tons; engines, 1,000 HP.; speed 13 miles an hour. A second and similar ship has been ordered for the signal ship. The government already has a cable ship, *The Burnside*, of 2,194 gross tons, maintained in connection with the cable services in the Philippines and between Seattle and Alaska.

Hitherto repairs to signal service wires have been delayed in some instances, due to the necessity for placing orders for cable to be used in making repairs. This will be obviated in the future by providing in each artillery district reserve lengths of cable which will be available at all times.

THE new edition of Mr. Pearson's "Crude Rubber and Compounding Ingredients," advertised on another page, has now been completed and is ready for distribution.

THE LAW AND WIRE INSULATION.

THE owners of high-tension electric wires, located at places where people have the right to go for work, business or pleasure, must see to it that the insulation is made as perfect as is reasonably possible and exercise care to keep them in that condition; otherwise they may be held in damages for injuries resulting without negligence on the part of the person injured. This was held where it appeared that a smelting company maintained an insufficiently insulated wire, strung 4 feet above the roof of its building and carrying about 2,500 volts. The plaintiff in the action was in the employ of the company at the time of the accident, and had been sent out on the roof of the building to make certain repairs. The roof was in a wet and slippery condition, and the plaintiff, being a common laborer and ignorant of electrical knowledge, grasped the wire to keep from slipping and falling. It was held that in sending the employe on the roof the company was bound to anticipate that he might come in contact with them, and should have provided against such an unfortunate contingency by having its wires in a properly insulated condition. Such was the decision in *Colusa Parrot Mining and Smelting Co. v. Monohan*, in the United States circuit court of appeals.

NEW TRADE PUBLICATIONS.

EUREKA Fire Hose Manufacturing Co. issue a 'General Catalogue of Fire Hose and Supplies for Fire Departments, Railways, Steamships, Wharves, Factories, Hotels, Public Institutions, etc., which is the most elaborate publication of the kind which has yet appeared. It lists the various styles of cotton and linen rubber lined and unlined hose for fire department use and interior fire protection, the variety of which is suggested by the fact that the company have registered no fewer than 46 trade marks on their products in this field in the United States, in addition to those registered in Canada, Great Britain, Cuba, Mexico and South American countries. This catalogue embraces, in addition to hose, a great variety of fittings and hose appliances, covering indeed the whole equipment of a city or village fire department, with the exception of fire engines of the larger class, which, as a rule, are manufactured by companies devoted exclusively to their production and under patent protection. Nearly every page carries one or more illustrations, and the index embraces 18 columns. [5¼" x 8". 224 pages.]

THE BRISTOL Co. (Waterbury, Connecticut), have issued advance partial lists of Bristol's Recording Pressure and Vacuum gages which are adapted, among other purposes, for rubber dryers, and feed water of steam boilers. [8" x 10½". 24 pages.]

THE CANADIAN RUBBER CO. OF MONTREAL, LIMITED, devote their Catalogue L to Fire Hose, Brass Fittings and Fire Department Supplies. They manufacture these articles in large variety, and many of them are illustrated in this attractive catalogue. [6" x 9". 65 pages.]

STEWART & HOLIHAN (New York), issue their catalogue No. 34 of Rubber Stamps. It illustrates a number of their patented designs in this field, together with many accessory articles. [6" x 4". 32 pages.]

THE WILLIAMS FOUNDRY AND MACHINE CO. (Akron, Ohio), under the title "Automobile Tire Building and Repair Equipment," issue descriptions of their products in this line, including several novelties of more than ordinary interest. [7½" x 9¾" 26 pages.]

E. J. WILLIS & Co. (New York), in their 1909 catalogue of Automobile Supplies and Clothing list and illustrate more than 600 items, embracing so many articles into which rubber enters as to demonstrate that without rubber there would be little motoring. [9" x 6¾". 64 pages.]

ALSO RECEIVED.

C. KENYON Co., Brooklyn, New York—Auto Coats and Dusters. 16 pp.

News of the American Rubber Trade.

THE NEW ENGLAND RUBBER CLUB'S ANNUAL.

THE recent naval dinner of the New England Rubber Club, held so late in the season, came so near the date of the annual meeting, which is regularly set for the third Monday in April, that it was decided not to have a smoker or any other form of entertainment at that time. The secretary, therefore, sent out notices calling a business meeting in accordance with the by-laws. Enough officers and members of the club met at the American House, Boston, where they listened to the report of the secretary and treasurer and elected officers for the ensuing year. The question of the mid-summer outing was also taken up and discussed informally. The secretary's report follows:

"The ninth year of the Club's existence having come to a close, finds it in a most satisfactory condition. Its membership continues to hold the high figures obtained two years ago, and the rubber trade in general look forward to the gatherings held by the Club with a great interest, and guests come from far and near to enjoy their functions.

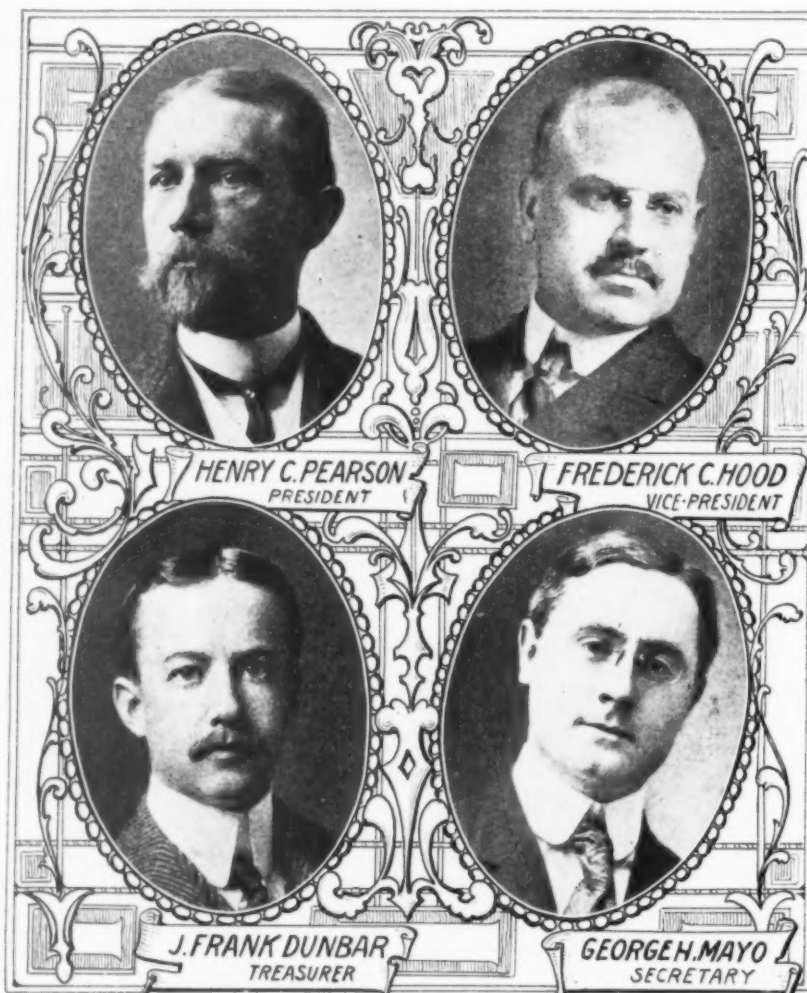
"Two entertainments have been held the past year. First, the regular summer outing, held Wednesday, July 15, goes down in the history of the Club as one of the most pleasant ever held. The boat rides, the ball game at the Fort, and the dinner at Point Shirley will long be remembered. Second, the annual mid-winter dinner was held at the Algonquin Club, Commonwealth avenue, which is an ideal place for such events. The popularity of these dinners was manifested by its being favored with one of the largest attendances ever had. The presence of the officers of the around the world fleet made the evening a pleasure to remember.

"Our membership in the Massachusetts State Board of Trade has been maintained.

"The past year has taken from our midst two of our esteemed members, Theodore S. Bassett and H. D. Warren. Their absence from our meetings will be a great loss, and their memories long cherished.

"The club's outlook for the coming year is a bright one. Every member feels that the affairs held by the club are beneficial in promoting a fuller feeling of goodfellowship, and this makes them a pleasure to attend. Respectfully submitted,

"ROBERT L. RICE, Secretary."



NEW OFFICERS OF THE NEW ENGLAND RUBBER CLUB.

The officers elected were: Henry C. Pearson, president; Frederick C. Hood, vice president; J. Frank Dunbar, treasurer; George H. Mayo, secretary, and Frank D. Balderston, assistant secretary. The directors are: Costello C. Converse, Elisha S. Williams, George P. Whitmore, Frederick H. Jones, Ira F. Burnham and Robert L. Rice. The list of honorary vice presidents now includes: L. D. Apsley, Augustus O. Bourn, Robert D. Evans, James Bennett Forsyth, George H. Hood, Henry C. Morse, John H. Flint, Alexander M. Paul, and Arthur W. Stedman.

A committee was appointed to draft appropriate resolutions containing a vote of thanks to the retiring president, Mr. Stedman, for the interest he had shown and the work done in behalf of the Club.

The treasurer's report follows:

RECEIPTS.		
Bank balance, April 20, 1908.....		\$874.99
For initiations	\$35.00	
Annual dues	1,063.75	
Assessments	1,197.47	2,296.22
Total		\$3,171.21
DISBURSEMENTS.		
Dinners	\$2,304.95	
Sundries as per vouchers	157.39	\$2,552.34
Bank balance and cash on hand.....		618.87
Total		\$3,171.21

FREDERICK H. JONES, Treasurer.

AFFAIRS OF THE UNITED STATES RUBBER CO.

THE directors of the United States Rubber Co. on April 1 declared from net profits the regular quarterly dividends of 2 per cent. on the first preferred stock and of 1½ per cent. on the second preferred stock, payable on April 15, without closing of the transfer books.

The annual meeting of shareholders of the United States Rubber Co., for the election of directors and the transaction of any other business which may properly be brought before the meeting, will be held at the registered office of the company, in New Brunswick, New Jersey, on Tuesday, May 18, at 12 o'clock noon. Under the laws of New Jersey no shares of stock may be voted which shall have been transferred after April 27.

HARTFORD RUBBER WORKS CO.—CHANGES.

THE resignation of Henry Plow from the position of treasurer of the Hartford Rubber Works Co., which he had held for two years past, to become connected with the Mitchell Motor Car Co. (Racine, Wisconsin), has been followed by the election as treasurer of James P. Krogh, who has been with the Hartford company for 13 years. D. W. Pinney, who has been Mr. Krogh's assistant in the credit department, has been appointed assistant treasurer, and Franklin Kesser, lately sales manager, has been made assistant secretary.

MORGAN & WRIGHT (DETROIT).

WILLIAM McMAHON has been appointed superintendent of this company's factory at Detroit, Michigan. A. A. Templeton, who formerly was their superintendent, is now general factory manager, succeeding George A. Burnham, who died in November last.

TO MAKE RUBBER TIRES IN NEW HAMPSHIRE.

RUBBER Steps Manufacturing Co. (Exeter, New Hampshire) are adding to their present plant, devoted hitherto to the manufacture of rubber-covered carriage steps, sill plates and car and stair treads, an outfit for making automobile tires and repairs of the same, together with plant for working their own rubber stock. They have issued a list of tire-repairing prices, and expect soon to begin to make tires. The company will continue the rubber step business. Later they intend reorganizing the company, with a change of name and increased capital. The Rubber Step company have been located at Exeter since 1892, when the business was removed from Boston. Mr. Daniel Gilman has been owner and manager all the while.

GUTTA-PERCHA AND RUBBER OF TORONTO.

ON account of the death of Mr. Harry D. Warren, president of the Gutta-Percha and Rubber Manufacturing Co. of Toronto, Limited, reported in our last issue, a new official list is announced. S. T. Warren (Mrs. H. D. Warren) has been elected president and Trumbull Warren treasurer. Charles N. Candee secretary, assumes the additional title of general manager.

THE CANADIAN ASBESTOS MONOPOLY.

THE Amalgamated Asbestos Corporation, Limited [see THE INDIA RUBBER WORLD, April 1, 1909—page 263] has been incorporated under the laws of the Dominion and is proceeding to acquire the principal asbestos producing properties in the province of Quebec, which are estimated now to supply about 90 per cent. of all the asbestos used in the world. The capital is \$10,000,000 besides an authorized indebtedness of \$15,000,000, in 5 per cent. bonds, one-half of which amount is to be issued at once. The directors include capitalists of Canada and also of Boston, Philadelphia, New York and other American cities, including Dr. Richard V. Mattison, president of Keasbey & Mattison Co. (Ambler, Pennsylvania), manufacturers of asbestos and rubber packings. The properties to be merged, controlling about 80 per cent. of the Canadian production, are now making net earnings of \$556,000 annually. The Canadian asbestos output was estimated at 700 tons in 1878, since which time the yearly output has grown to upwards of 60,000 tons. The total production to date in Quebec has been over 400,000 tons, having an

aggregate value of \$18,000,000. The principal mines are considered practically inexhaustible, and many known deposits remain to be developed.

"NOW SILENT RUBBER FACTORY."

THE Providence (Rhode Island) *Journal* in a recent issue devoted a half page to a story of travel of one of its reporters in search of the suburb of South Elmwood. The conclusion he reached was that the people who live in South Elmwood know where it is, but this knowledge is not shared by many other residents of Providence. The story on the whole is meant to be facetious, but a serious paragraph in it relates to a "now silent rubber factory"—that of the defunct Atlantic Rubber Shoe Co. It is suggested that if this plant should be sold and a new manufacturing concern established, there might come a "boom," and an increase in the population of South Elmwood. It is stated that "people have been out to look at the factory," but as yet no definite offer for it has been made.

AN EMERGENCY ORDER FOR FIRE HOSE.

THE Eureka Fire Hose Manufacturing Co. (New York), on April 13, following the large fire at Rochester, N. Y., received a telephone message from that city ordering 5,000 feet of their "Paragon" fire hose. This message was received at 5:05 P. M., and the order was filled before midnight. The express train on the New York Central and Hudson River railroad leaving New York at 11:45 P. M. carried the hose referred to, although it had been necessary, at the Eureka company's factory, at Jersey City, New Jersey, to thread 100 sets of couplings, attach them to the hose, and then haul the hose from Jersey City to the railway station in New York. The Eureka Fire Hose Manufacturing Co. suggest: "A universal thread adopted by all fire departments would be a great thing, as with the volume of business we are doing, we could carry several thousand sets on hand, and would be able to ship a very large quantity of hose in case of an emergency in a few hours after receipt of order."

TRADE NEWS NOTES.

THE Cawn Mining and Manufacturing Co. (Canton, Ohio) state that their advertisement in THE INDIA RUBBER WORLD already has attracted attention to their product, Aluminite, abroad as well as at home, and brought them a number of inquiries regarding it from Europe.

Mr. E. B. Southworth has retired from the superintendency of the Stoughton Rubber Co. (Stoughton, Massachusetts) to accept the position of manager of the George E. Belcher Last Co. As he was leaving the Stoughton Company Mr. Southworth was invited into one of the large workrooms in which the employees had gathered, when President Burnham, in their behalf, tendered him a valuable and handsome present, accompanied by a speech expressing their appreciation of him.

The United Indurated Fibre Co. (Lockport, New York) have passed under the control of the H. W. Johns-Manville Co., the asbestos manufacturers.

The Wire and Telephone Co. of America (Rome, New York) have discontinued their western sales agencies and concentrated their selling department at the home office.

The Western Electrical Co., dealers in electrical supplies at Omaha, Nebraska, to avoid confusion of their name with that of the Western Electric Co. (Chicago), who lately opened a branch in Omaha, have adopted the name Johnston Electric Co.

Mr. R. Lloyd Jones, having retired as secretary-treasurer of The Canadian Rubber Co. of Montreal, Limited, this office has been taken over by Mr. Leonard D. Shaw.

The National India Rubber Co. finished recently a government order for 5,000 army blankets. About 1,500 employees are now at work in the factory.

The Fisk Rubber Co.'s mechanically fastened on tires are reported to have been adopted for the equipment of their fire department apparatus by the Robinson Fire Apparatus Manufacturing Co. (St. Louis) and La France Engine Co. (Elmira, New York).

GOODRICH NEW YORK HEADQUARTERS.

THE B. F. Goodrich Co. (Akron, Ohio) have established their business in New York in one of the most notable buildings in upper Broadway, in the heart of the automobile and tire trading district. The character of the building alone, and the amount of space which they occupy in it, indicate the importance of their trade in the East. Six of the twelve stories in the building of which a view is given on this page, are occupied by the Goodrich company, who are concentrating in one place all their business in New York—mechanical and general goods as well as tires—which means that the premises so long occupied by this company in Reade street will be vacated. The business of this great Akron concern, by the way, in New York and the East generally, is conducted under a separate corporate title—The B. F. Goodrich Co., of New York. The new building, of which an illustration is shown on this page, has been erected by the Goodrich company, or land owned by them.

AN ENORMOUS PIECE OF RUBBER.

[FROM "FOLHA DO NORTE"
(PARA) MARCH 27.]

PART of the cargo of the steamer *Eurico*, which arrived a few days ago from the Acre was an enormous piece of rubber weighing 508 kilograms [=1,118 pounds], consigned to Leite & Co., of this city. This was prepared by the *seringueiro* [rubber cutter], Henrique I. Dos Santos, with the help of his two sons, under age. It took them five months to do it, and they used in its preparation 800 bottles of milk, weighing as many kilograms, and this was its weight when it was still fresh. This man Santos, whose crop with that of his sons amounts to 1,979 kilograms of rubber, works in *seringa* da Bocca do Riozinho, the property of Senhor José Maria Dias Pereira, who have other rubber plantations in the Acre region, and they send annually about 250 tons to Messrs. Leite & Co., *aviadores* of Pará. It took 25 days for the transportation of this enormous piece of rubber from the plantation to the river bank of the Acre, and on account of its excessive size it went in a boat by itself. This is a great curiosity, and perhaps the biggest ever manufactured in the Amazon, and in view of this Messrs. Leite & Co. have decided to exhibit it in this city, afterwards ship it to New York, and from that port to Europe, so as to be exhibited at the next rubber exhibition in England.

[THE interesting specimen of rubber mentioned in our Pará contemporary has arrived in New York and is on exhibition in one of the windows of the New York branch of The Diamond Rubber Co.—THE EDITOR.]

GOOD BUSINESS OF F. R. HOWELL BRASS WORKS.

F. R. HOWELL Brass Works, (Philadelphia), who were burned out on April 3 at No. 716 Cherry street, are already in full working order at No. 122 North Franklin street, where they are even better prepared than before to fill orders for hose couplings, brass

hose fittings and fire department supplies. Recently they have filled some large orders for couplings from the Isthmian canal zone and for the New York fire department. They have made some important contracts with large railway companies for their new Aubrey couplings. Mr. F. R. Howell, of this company, has had eighteen years' experience in this line of business.

TRADE NEWS NOTES.

THE Archer Rubber Co. (Milford, Massachusetts,) are about ready to occupy their new quarters, in the building formerly occupied by the Milford Rubber Co., and the purchase of which for use by the Archer company was reported recently in this journal.

Frederick Dockendorf during the month completed a half century of employment at the College Point plant of the American

Hard Rubber Co., in recognition of which he received from the company a present of a substantial sum of money and a letter of commendation for his faithful service. This was in accordance with the policy of the company, who now have on their list of employees several men who have been with them for more than a half century.

The Firestone Tire and Rubber Co. (Akron, Ohio) have consolidated their two branches in St. Louis in their enlarged store at No. 2230 Olive street, under the management of Mr. O. O. Petty.

A fire which started in the basement of Oliver R. Howe's rubber goods store at No. 52 Central square, Lynn, Massachusetts, on the morning of April 26, damaged the building and caused other losses to the amount of \$13,000.

Work was to begin at the plant of the new Converse Rubber Shoe Co. (Malden, Massachusetts) on the morning of April 26. The grinding room was to open on that day and the cutting, shoe, and packing rooms in the usual order thereafter. The present plant has a capacity of 4,000 pairs of

shoes daily. The principal office of the company is at Malden, and a sample room will be maintained at No. 50 High street, Boston.

A new store at Holyoke, Massachusetts, is that of The Yoerg Tire and Rubber Co., at No. 496 Dwight street. The firm embraces William P. Yoerg, sometime salesman at the mechanical goods department of the Boston branch of The Diamond Rubber Co., and Joseph M. Hetzer, who has had to do with the Diamond company's tire selling branch in New York City. The new company will market Diamond products in western Massachusetts.

The Oneida Rubber Co., of which Edwin J. Holstein is proprietor, have opened a store in Hartford, Connecticut, at No. 1076 Main street, for the sale of tires of all kinds, and the rubber goods generally carried in a retail store.

Empire Automobile Tire Co. (Trenton, New Jersey) have built an addition to their factory lately which will enable them to very greatly increase their capacity, which has, until this time, been crowded to the extreme limit.



THE B. F. GOODRICH Co., OF NEW YORK.

[New premises, Nos. 1776-1778 Broadway, at Fifty-seventh street. The Broadway front appears at the left of the picture.]

NEW RUBBER TIRE FACTORY.

A new product in the line of automobile accessories is the McGraw-Burgess vertical fabric tire, for the manufacture of which a company has been incorporated at Pittsburgh, Pennsylvania, under the style The McGraw-Burgess Vertical Fabric Tire Co., with \$100,000 capital, stated to be all paid in. The company are erecting at East Palestine, Ohio—which is not far west from Pittsburgh—a plant, the principal building of which is to be 250 x 50 feet, two stories, of brick, iron and cement construction. The company state that they expect to be in full operation by the middle of June. The rubber machinery equipment of the company is being supplied by the Farrel foundry. The officers of the company are: E. C. McGraw, proprietor of the American House at Pittsburgh, president; R. W. McGraw, vice president; H. G. Morgan, treasurer, and Har-ley Howard, secretary. William L. Burgess will be sales manager. The offices are at Grant boulevard and Thirty-third street.

A CROCKER STORE ANNIVERSARY.

For thirty-three years the Hope Rubber Co. has been one of the leading rubber stores not only in Providence, Rhode Island, but in New England. Commemorating its thirty-third anniversary there was held an opening on May 1, at which time the public viewed a beautifully decorated store twice the size of the old one. In other words, the floor space was doubled so that there is now 12,000 square feet in use. The opening began with a musical programme from 2 until 5 p. m., at which time a luncheon was given to seventy-five invited guests. Another musical programme was given in the evening. The opening was largely attended and Mr. Isaac Crocker, the proprietor, was warmly congratulated upon the growth of the business of which he is the head.

PRESENTATION TO MR. FOSTER.

ON the evening of April 6 the selling force connected with the New York branch of the Boston Woven Hose and Rubber Co. honored their retiring manager, Mr. Wallace F. Foster [see THE INDIA RUBBER WORLD, April 1—page 262], with a farewell supper at Kalil's, on Park row, and presented him with a silver loving cup bearing the names of those present: Messrs. Frederick L. McCarty, Charles W. Hobart, George L. Harrington, and Charles E. McLaughlin, the presentation speech being made in a happy manner of Mr. McCarty. Mr. Foster had been at the New York office for nine years, after having been connected with the company in Boston.

CONDITION OF PLANTATION "RUBIO" IN MEXICO.

THE Tehuantepec Rubber Culture Co. (New York) have published the report of the annual inspection report of their Plantation Rubio in Mexico, made by Mr. Frank K. Hogue, of Toledo, Ohio. This report, made by one of the investors in the company, chosen for the purpose by the whole body of investors, is of interest as showing the condition of the rubber plantation as compared with the showing made by the official inspectors in former years, a satisfactory degree of progress being indicated. The pamphlet contains also a special expert on the Rubio plantation by Mr. James C. Harvey, a private planter of rubber in Mexico, whose name is familiar to readers of THE INDIA RUBBER WORLD. The point of chief interest in Mr. Harvey's report is his commendation of the policy adopted at Rubio, under the management of Superintendent Luter, of permitting a certain amount of undergrowth between the trees, instead of clean weeding. This policy, by the way, is being regarded favorably by many planters in Ceylon and Malaya. Mr. Harvey writes:

"I was agreeably surprised to find the major portions of the plantings quite free from grasses, and in other instances grasses well under way towards extermination, owing to the intelligent encouragement given to what are technically known as 'soil preservers,' or soft growth which rises some distance above the grasses, gradually shading them out and restoring humus and nitrogen to the soil. The importance of these agencies cannot be overestimated; they are vital to the well-being of *Castilloa*."

NEW INCORPORATIONS.

THE Pennsylvania Rubber Co., of Michigan, April 2, 1909, under the laws of Michigan; capital \$10,000. To carry on the business in the state named of the Pennsylvania Rubber Co. (Jeanette, Pa.). Incorporators: Seward E. Andrews, George G. Weidner and C. W. Moody. Offices at Detroit, Mich.

Barrell Pneumatic Tire Protector Co., April 14, 1909, under the laws of Massachusetts; capital \$50,000. Incorporators: Arthur E. Carson, Bedford, Mass.; Robert H. Kammler, Boston, and Horace A. Crossman, Cambridge, Mass.

Victor Tire Traction Co., April 14, 1909, under the laws of Massachusetts; capital, \$50,000. Incorporators the same as for the Barrell Pneumatic Tire Protector Co.

Dreadnaught Tire Co., March 23, 1909, under the laws of New Jersey; capital \$2,000. Incorporators: Stewart Browne and George W. Harris, No. 170 Broadway, New York, and William Lee Hoskins, Glenbrook, Connecticut.

Dixon Cable System Co., March 30, 1909, under the laws of New Jersey; capital authorized, \$300,000. Incorporators: H. O. Coughlan, B. F. Mantz and John R. Turner, all giving No. 15 Exchange place, Jersey City, as their address.

E. F. Smith Co., April 20, 1909, under the laws of Connecticut; capital \$50,000. To manufacture and deal in goods of metal, rubber and other materials. Incorporators: Edwin F. Smith, Frank H. Smith and Harriet S. Smith, all of Naugatuck, Conn.

The General Manufacturing Co., of Waterbury, April 17, 1909, under the laws of Connecticut; capital \$10,000. To manufacture goods of metal, rubber and other materials. Incorporators: John Draher, Max Kiessling and Charles F. Probst, all of Waterbury, Conn.

Elwell Rubber Manufacturing Co., April 9, 1909, under the laws of New York; capital, \$15,000. Incorporators: Russell T. Elwell, Carson City, Nevada; Henry Smith, Paterson, New Jersey; Isidore L. Broadwin, No. 41 Park Row, New York. Elwell has been identified with the rubber industry for years, principally in New England. The office of the new company is to be in New York City.

Akron Tire and Vulcanizing Co., March 27, 1909, under the laws of Illinois; capital, \$2,500. Incorporators: Samuel Berkowitz, Frank B. Grover, and Walter H. Eckert. Papers filed by Frank R. Grover, attorney, No. 79 Dearborn street, Chicago.

TRADE NEWS NOTES.

THE Firestone Tire and Rubber Co. have an affidavit made by A. Goyert, of Greenburg, Indiana, stating that on a truck used by him two rear tires gave 25,200 miles of service each, and the front tires 31,000 miles, every one of the set having traveled enough road to encircle the world. The tires were of Firestone make.

The Republic Rubber Co., of New York, in view of their growing tire trade in New England, have opened an office in Boston, at No. 735 Boylston street.

The New Haven Rubber Repair Works (No. 481 State street, New Haven, Connecticut) have been bought by J. S. Byron and H. W. Neely, who have renovated and enlarged the shop and placed it under the management of J. W. Hartley, a capable tire man of Hartford.

The Leather Tire Goods Co. are removing their factory from Newton Upper Falls, Massachusetts, to Niagara Falls, New York, where the entire business, manufacturing and sales, will be concentrated from May 1.

The Faultless Rubber Co. (Ashland, Ohio) announce the removal of their New York office from West Fourth street to No. 101 Fifth avenue.

The Vant Woud Rubber Co. (New York), in view of the steady increase of their business, have removed their store to Nos. 109-111 Worth street, which is near Broadway and likewise to a subway station.

B. Loewenthal & Co., scrap rubber merchants in New York and Chicago, announce the opening of a branch office at Akron, Ohio.

PERSONAL MENTION.

MR. HEINRICH OTTO TRAUN, of Hamburg, Germany, was a welcome visitor to the offices of THE INDIA RUBBER WORLD, while in the United States during the past month. Mr. Traun is the son of Senator Dr. Traun, the founder of Dr. Heinrich Traun & Söhne (formerly Harburger Gummi-Kamm Co.). The head of the family having retired from active connection with the business, its control passed to his sons, and since the lamented death of the elder, Dr. Frederick Traun, the actual head has been the gentleman who has just been renewing in America the friendships and acquaintances which date from 1894, when he became connected with a New York house for a while in order to study business conditions in America.

MILLER-MYERS.

THE wedding of Mr. Thomas William Miller and Miss Helen Adelaide Myers, at Ashland, Ohio, on March 31, was the social event of the season in that part of the state. The bride is the daughter of Mr. and Mrs. Francis E. Myers, at whose home the ceremony occurred at noon. Mr. Miller, as the whole rubber trade knows, is the president of The Faultless Rubber Co., of Ashland, one of the principal industrial establishments in that town. The bridal pair went to the Pacific coast, and expect to be at home in Ashland, in a residence which is Mr. Miller's gift to his bride, by June 1. Prior to the wedding a bachelor dinner, given in honor of the prospective bridegroom at the Hotel Otter, was attended by the leading business and professional men of Akron (where Mr. Miller formerly lived) and Ashland, together with several guests from a distance.

CHANGES OF ADDRESS.

THE firm of Parker, Stearns & Co., rubber manufacturers, so long established in New York, and now occupying the new factory in Brooklyn illustrated in THE INDIA RUBBER WORLD, September 1, 1908 (page 415), announce the removal of their offices to the new location—Nos. 286-300 Sheffield avenue, Brooklyn, New York.

U. S. Rubber Reclaiming Works (New York), have removed their offices from Duane street to No. 277 Broadway (Broadway-Chambers building).

TRADE NEWS NOTES.

THE Electrical Insulating and Specialty Co. is mentioned as having been organized at Cleveland, Ohio, where a factory will be erected for making a new substitute for rubber, for electrical and other purposes. Charles C. Clark is president of the concern.

Mr. A. R. Duryee, for many years superintendent of Alfred Calmon's Asbest-und Gummiwerke in Hamburg, sailed for the United States late in March. He expects to spend about a month in Virginia and will later visit the rubber centers of the United States.

Mr. J. H. Stedman, of J. H. Stedman & Co., Inc., in the waste rubber trade, has been elected vice president of the Trade Club of Boston.

The largest office calendar which has come to THE INDIA RUBBER WORLD at any time is issued by the Dunlop Tire and Rubber Goods Co., Limited (Toronto). There is a detachable sheet for each month in the year, the figures on which can be read across the street, but even more space is devoted to excellent photogravures of the head office and the factory buildings of this enterprising company.

A RECENT German patent (No. 198,979), issued to Friedrich Wiehard, of Hanover, relates to a novel method of attaching a solid rubber tire. The shape of the tire is also unusual, as will appear from the accompanying illustrations. Figure 1 shows a section of the felly and of the tire, indicating also the means by which the tire is held within the flanges of the rim. Figure 2 shows the tire and its appurtenances separated, including the details of the screw arrangement which binds the flanges to the felly.

A SIDE LIGHT ON THE TIRE TRADE.

DEVELOPMENT in the automobile industry in whatever branch, we take it, presages good for the rubber tire industry. The more automobiles that are made, and the more kinds of automobiles, the greater will be the improvement in the various details of the automobile manufacture, including the appliances and machinery employed. And the greater will be the economy of production, the cheaper these vehicles will become and the greater the number sold. All of which means an increased demand for tires, with the logical result, by the same token—and better tires at a lower cost than now.

These reflections are suggested by the progress made in France in the manufacture of automobiles for agricultural use—for plowing land, keeping crops in condition, harvesting, hauling to market, etc. Plows, harrows, reaping machines and what not can now be operated with the use of gasoline motors instead of horses. An international congress is to be held at Amiens in July for the promotion of the "agricultural automobile" and its applications, in connection with which will be an exhibition of appliances. An exposition devoted to the same interest was held at Brussels in April, and another, on a larger scale, occurs this month at Antwerp. In Paris a periodical devoted to the new interest, *L'Automobile Agricole*, soon will complete its second year. If there is merit in the new departure in agriculture, it is not likely to remain unknown in other countries than those named here.

Of course plows, harvesters, and the like, and particularly stationary engines for farm use operated by motors on the same principle as is employed in automobiles, will not directly widen the demand for rubber tires. But as has been said above, their manufacture tends to the development of the automobile industry, and it can hardly fail to happen that one result will be an increased demand for motor vehicles that do require tires. One point to be made that the agricultural automobile will tend to lessen the number of horses and accustom the world to do without horses, and this alone will promote the use of the automobile as a passenger vehicle—on farms, where so large a proportion of the world's population lives—as well as in cities.

At a special meeting of shareholders in Cie. du Caoutchouc Monopole du Portugal (Brussels, March 31) a resolution was adopted to go into liquidation, with a view to reorganizing the business by forming a new company, with 700,000 francs capital. Paul Wauvermans was named as liquidator. The company was formed in Belgium March 5, 1898, with the exclusive privilege of manufacturing rubber goods in Portugal for ten years, and with 1,000,000 francs [= \$193,000] capital. A factory was established near Lisbon, and for awhile the results were satisfactory, but for several years past there have been no profits.

THE development of aerial navigation has led to great activity in the rubber industry in the production of rubberized fabrics for balloons, aeroplanes and the like. Already THE INDIA RUBBER WORLD has mentioned at length the production of such fabrics by Continental Caoutchouc and Gutta-percha-Compagnie, of Hanover. Three other German rubber factories may now be mentioned as having engaged in a practical way in making goods of this class: Etablissements Hutchinson, at Mannheim; Franz Clouth, Rheinisch Gummiwaren-Fabrik m. b. H., at Cologne; and Aktiengesellschaft Metzeller & Co., at Munich.

THE accounts of Mitfeldtsche Gumminaren-Fabrik Louis Peter, A.-G. (Frankfort o/ M.) show a net profit for the business year 1907-08 of 1,200,031 marks [= \$285,607.38], against 806,223 marks in the preceding year. The dividend was 22 per cent., against 16 per cent. the year before. The capital of the company is 3,000,000 marks. Solid tires had a good sale during the year, and large contracts are in hand for future business.

Review of the Crude Rubber Market.

THE prices of Pará grades have advanced very materially during the month past, as will be apparent from the comparative statement which appears on this page. The same rate of increase does not apply to other classes of rubber; in fact, most grades of Africans have not shown an advance during the month. Higher prices are quoted, however, for Centrals and Assam and allied grades. Eastern plantation has advanced in keeping with Pará qualities.

The extreme low price for the past year of Pará rubber appears to have led to liberal buying by consumers in the various markets, so that larger than normal "invisible supplies" resulted, and for a while this condition interfered with the free selling of rubber, but to-day, in spite of the larger production in the Amazon region than the average, prices continue to mount upward. In other pages of THE INDIA RUBBER WORLD this month appear several articles bearing upon the general situation which point to a deliberate effort in the Amazon region to demand a higher return for rubber than has prevailed at times of late, the same being designated as the "valorization" of rubber. The United States consul at Pará, in a report issued from Washington under the date of April 19, spoke of indications that rubber was being held in his district at 7 milreis per kilogram or higher for fine rubber, and the latest telegraphic advices noted on this page point to quotations at Manáos of 7¼ milreis. Without going into details as to what selling price in New York or in Europe such quotations would point to, it may be said that at current rates of exchange 7½ milreis per kilogram is equivalent to a fraction over \$1 per pound. The consul quoted refers to 7 milreis as meaning \$1.28 per pound in New York.

It may be of interest to note that just one year ago our advices from Manáos quoted fine rubber at 4.8 milreis per kilogram, and by comparing the dollar price on this page with that on the same date in 1908 our readers will be able to estimate the effect of an advance at Manáos in quotations from 4.8 to 7¼ milreis. It is too early yet to estimate the probable effect of the new movement in Amazon centers, but undoubtedly the movement has such strength that it must have consideration in dealing with rubber price conditions.

The receipt at Manáos have been singularly uniform during the past three crop years, from the first of July to the current date; so far as "Pará rubber" is concerned—slightly over 18,000 tons in each season to March 31. More caucho has been coming forward, however, in each season, so that the total of all grades has advanced from 21,875 tons on March 31, 1907, to 23,131 tons on the same date this year. The largest arrival at Pará of all grades to May 1 in any crop year was 33,900 tons in 1907. The receipts were considerably less in the following year, but up to April 19 in the current season the total already had reached 32,370 tons. It is not only possible, but probable, that the current crop will be larger than in any previous other twelve months. It is clear, therefore, that the higher prices quoted to-day in New York and Europe are in spite of an increased production on the Amazon. Besides, there must be taken into account the considerable accumulation of rubber by manufacturers bought during last year's low prices, as already mentioned.

An important member of the crude rubber trade suggests that a very important factor in the market has been the large production of rubber tires during the busy season in this line which lately has been experienced, and he regards no other one point as having a more important bearing upon this market than the volume of automobile tires now held unsold. Beginning with the first of the past month the rubber footwear industry became very active, and all the factories in this branch are working at what is considered an approach to a normal rate.

The activity of the tire industry continues, as is indicated by the statement in another column that in a single city more than 2,000 employes have been put to work on tires since the beginning of this year. It is less easy to estimate the condition of the production in other branches of the rubber manufactured just now.

Following are quotations at New York for Pará grades, one year ago, one month ago, and April 29—the current date:

PARA.	May 1, '08.	Apr. 1, '09.	Apr. 29.
Islands, fine, new.....	79@80	119 @120	123@124
Islands, fine, old.....	none here	121 @122	124@125
Upriver, fine, new.....	83@84	122 @123	126@127
Upriver, fine, old.....	85@86	125 @126	128@129
Islands, coarse, new.....	43@44	57 @58	58@59
Islands, coarse, old.....	none here	none here	none here
Upriver, coarse, new.....	58@59	94 @95	95@96
Upriver, coarse, old.....	none here	none here	none here
Cametá .....	.....	63½@64	68@69
Caucho (Peruvian), ball.	45@46	83 @84	84@85
Caucho (Peruvian), sheet	56@57	73 @74	76@77
Ceylon (Plantation), fine sheet	87@88	129 @130	132@133

AFRICAN.

Lopori ball, prime....	108@109	Massai, red	95@96
Lopori strip, prime....	—@—	Soudan niggers	85@86
Aruwimi	94@95	Cameroon ball	64@65
Upper Congo ball, red.	96@100	Benguela	59@60
Ikelemba	—@—	Madagascar, pinky	90@91
Sierra Leone, 1st quality	95@96	Accra flake	21@22

CENTRALS.

Esmeralda, sausage ...	81@82	Mexican, scrap	80@81
Guayaquil, strip	71@72	Mexican, slab	58@59
Nicaragua, scrap	79@80	Mangabeira, sheet	53@54
Panama	63@64	Guayule	32@33

EAST INDIAN.

Assam	92 @93	Borneo	35@45
Pontianak	4¾@—		

Late Pará cables quote:		Per Kilo.	
Islands, fine	6\$100	Upriver, fine	7\$000
Islands, coarse	2\$500	Upriver, coarse	5\$000
		Exchange	15 3/16d.

Latest Manáos advices:		Per Kilo.	
Upriver, fine	7\$250	Exchange	15 7/32d.
Upriver, coarse	5\$250		

NEW YORK RUBBER PRICES FOR MARCH (NEW RUBBER).

	1909.	1908.	1907.
Upriver, fine	1.22@1.26	.70@.83	1.16@1.21
Upriver, coarse .....	.93@.97	.48@.59	.92@.96
Islands, fine	1.18@1.21	.68@.80	1.14@1.19
Islands, coarse .....	.55@.61	.41@.43	.66@.70
Cametá .....	.63@.67	.41@.48	.71@.73

LIGHTER LONDON 'BUSES AND TIRES.

A MATTER of no little importance to the rubber tire trade is involved in the new regulations in the city of London regarding the use of motor 'buses. The heavy, noisy vehicles now running are to be replaced by lighter and quieter ones, with a smaller carrying capacity. This change is by order of the chief commissioner of police, who is at the head of the commission controlling the licensing of the omnibuses. London has always resented the presence of these noisy, ill smelling and cumbersome vehicles among the light hansoms and four-wheeled cabs and the quiet 'buses drawn by horses. Not even the speed of the motor 'bus reconciled the Londoner to their existence. The regulations of the license given in 1906 are to be cancelled and motor 'buses must now be built of a weight not exceeding 3½ tons. One drawback to the profitable operation of the heavy 'buses has been the heavy cost of wear and tear of tires, which will be greatly diminished with the use of lighter vehicles.

In regard to the financial situation, Albert B. Beers (broker in crude rubber and commercial paper, No. 68 William street, New York), advises as follows: "During April the demand for paper has continued good, rates ruling at $4\frac{1}{2}$ @ $4\frac{3}{4}$ per cent. for the best rubber names, and 5 @ $5\frac{1}{2}$ per cent. for those not so well known."

Rubber Receipts at Manaos.

DURING March and eight months of the crop season for three years [courtesy of Messrs. Scholz & Co.]:

	MARCH.			JULY-MARCH.		
	1909.	1908.	1907.	1907-'9.	1907-'8.	1906-'7.
Rio Purús-Acre tons	533	938	2,022	7,866	8,129	7,246
Rio Madeira	309	288	292	2,794	2,506	2,955
Rio Jurua	578	345	1,071	3,686	3,389	3,762
Rio Javary-Iquitos	162	59	177	2,318	2,424	2,696
Rio Solimões	77	41	74	945	1,078	855
Rio Negro	93	67	69	483	441	526
Total	1,752	1,738	3,705	18,092	18,057	18,040
Caucho	967	1,067	1,108	5,039	4,647	3,835
Total	2,719	2,805	4,813	23,131	22,704	21,875

Rubber Scrap Prices.

LATE New York quotations—prices paid by consumers for carload lots, per pound—show practically no change since last month:

Old rubber boots and shoes—domestic.....	85½@	83½
Old rubber boots and shoes—foreign.....	8½@	8½
Pneumatic bicycle tires.....	5½@	6
Automobile tires	5½@	6
Solid rubber wagon and carriage tires.....	7 @	7½
White trimmed rubber.....	9½@	10
Heavy black rubber.....	5 @	5½
Air brake hose.....	3½@	3½
Garden hose	2 @	2½
Fire and large hose.....	2½@	3
Matting	1¼@	1½

Rubber Imports at Riga.

IN *Gummi-Zeitung* appear the following figures, indicating, in round figures, the quantity of crude rubber imported annually at the port of Riga, which does not, of course, embrace the whole imports for Russia:

In 1902	pounds.	3,744,000
In 1903		5,220,000
In 1904		3,024,000
In 1905		4,536,000
In 1906		6,696,000
In 1907		5,076,000

IMPORTS FROM PARA AT NEW YORK.

[The Figures Indicate Weights in Pounds.]

APRIL 6.—By the steamer *Dominic*, from Manáos and Pará:

IMPORTERS.	Fine.	Medium.	Coarse.	Caucho.	Total.
Poel & Arnold.....	186,400	45,200	96,800	90,400=	418,800
A. T. Morse & Co.....	203,600	45,300	40,500	67,200=	356,600
New York Commercial Co.	26,400	7,200	80,600	64,000=	178,200
Hagemeyer & Brunn....	56,100	1,400	35,700	12,500=	105,700
L. Hageners & Co.....	55,000	3,600	3,000	.....=	61,600
General Rubber Co.....	3,900	2,700	23,300	1,500=	31,400
Edmund Reeks & Co.....	3,600	300	21,800	.....=	25,700
C. P. dos Santos.....	.....	.....	.....	15,400=	15,400
G. Amsinck & Co.....	.....	.....	.....	3,000=	3,000
Total	535,000	105,700	301,700	254,000=	1,196,400

APRIL 6.—By the steamer *Cearense*, from Manáos and Pará:

IMPORTERS.	Fine.	Medium.	Coarse.	Caucho.	Total.
New York Commercial Co.	298,900	67,000	138,900	215,500=	720,300
Poel & Arnold.....	132,100	13,800	146,100	82,300=	374,300
A. T. Morse & Co.....	164,200	34,000	119,400	25,500=	343,100
G. Amsinck & Co.....	83,000	16,800	4,800	.....=	104,600
C. P. dos Santos.....	24,300	9,300	18,500	40,800=	92,900
Hagemeyer & Brunn....	17,500	.....	53,500	.....=	71,000
General Rubber Co.....	8,400	2,600	5,500	32,900=	49,400
Edmund Reeks & Co.....	4,600	.....	10,500	.....=	15,100
Total	733,000	143,500	497,200	397,000=	1,770,700

PARA RUBBER VIA EUROPE.

	POUNDS.
MARCH 26.—By the <i>Adriatic</i> =London:	
Poel & Arnold (Coarse).....	9,000
MARCH 29.—By the <i>Alliance</i> =Mollendo:	
W. R. Grace & Co. (Caucho).....	8,000
APRIL 5.—By the <i>Celtic</i> =Liverpool:	
Livesey & Co. (Coarse).....	22,500
APRIL 7.—By the <i>Maraval</i> =Bolivar:	
American Trading Co. (Fine).....	5,500
American Trading Co. (Coarse).....	2,500
APRIL 14.—By the <i>Magdalena</i> =Mollendo:	
New York Commercial Co. (Fine).....	3,500
APRIL 13.—By the <i>Kroonland</i> =Antwerp:	
W. L. Gough Co. (Fine).....	2,500
APRIL 16.—By the <i>President Grant</i> =Hamburg:	
George A. Alden & Co. (Fine).....	3,500
APRIL 19.—By the <i>Baltic</i> =Liverpool:	
Livesey & Co. (Coarse).....	22,500
APRIL 20.—By the <i>Minneapolis</i> =London:	
General Rubber Co. (Coarse).....	45,000

OTHER NEW YORK ARRIVALS.

CENTRALS.

[*This sign, in connection with imports of Centrals, denotes Guayule rubber.]

	POUNDS.
MARCH 26.—By the <i>El Monte</i> =New Orleans:	
Eggers & Heinlein.....	3,000
G. Amsinck & Co.....	3,000
A. N. Rotholz.....	4,000
A. T. Morse & Co.....	2,500
Luzarte & Whitney.....	1,000
MARCH 26.—By the <i>El Rio</i> =Galveston:	
Continental-Mex. Rubber Co....	*75,000
For Canada	*7,500
MARCH 27.—By the <i>Monterey</i> =Frontera:	
Harburger & Stack.....	8,000
E. Steiger & Co.....	5,500
E. N. Tibbals & Co.....	3,000
H. Marquardt & Co.....	1,000
Graham Hinkley Co.....	1,500
General Export & Com. Co.,	1,000

MARCH 29.—By the *Sigismund*=Colombia:

G. Amsinck & Co.....	6,000
Maitland, Coppell & Co.....	3,000
Kunhardt & Co.....	2,000
M. Delves & Co.....	1,000
M. Blanco & Co.....	1,000

MARCH 29.—By the *El Dia*=Galveston:

Cont.-Mexican Rubber Co....	*55,000
For Boston	*4,500

MARCH 29.—By the *Alliance*=Colon:

G. Amsinck & Co.....	3,500
J. S. Sambrade.....	2,000
F. Lapeira	2,000
Piza Nephews Co.....	1,500
National Sewing Machine Co.	1,500
Jose Julia & Co.....	1,000
Meyer Hecht	1,000

APRIL 1.—By the *Cienfuegos*=Tampico:

Ed. Maurer	*70,000
For Akron, Ohio.....	*34,000

APRIL 1.—By the *Atrato*=Colombia:

Maitland, Coppell & Co.....	8,000
J. A. Pauli & Co.....	2,500
Seanz & Co.....	2,000
Lauman & Kemp.....	1,000

APRIL 2.—By the *Colon*=Colon.

Brandon & Bros.....	6,000
L. Johnson & Co.....	2,000
Hirzel, Feltman & Co.....	1,000
Jose Julia & Co.....	1,000
A. M. Capens' Sons.....	1,000

APRIL 3.—By the *Mexico*=Frontera:

Harburger & Stack.....	14,000
Strube & Ulte.....	3,000
E. Steiger & Co.....	5,500
George A. Alden & Co.....	4,000
Graham Hinkley Co.....	2,500
J. W. Wilson & Co.....	2,000
Scholz & Marturet.....	1,000
American Trading Co.....	1,000
H. Marquardt & Co.....	1,500
E. N. Tibbals & Co.....	1,000

APRIL 5.—By the *Vigilancia*=Tampico:

Poel & Arnold.....	*110,000
New York Commercial Co....	*60,000
Remsch & Helde.....	*45,000
Ed. Maurer	*45,000

APRIL 5.—By the *Verdi*=Bahia:

J. H. Rossbach & Bros.....	20,000
New York Commercial Co.....	18,000

APRIL 5.—By the *Bracos*=Galveston:

For Canada.....	*15,000
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APRIL 5.—By the *Comus*=New Orleans:

A. T. Morse & Co.....	3,500
Manhattan Rubber Mfg. Co.,	2,500
Eggers & Heinlein.....	1,000
G. Amsinck & Co.....	1,000

APRIL 6.—By the *Norse Prince*=Bahia:

A. Hirsch & Co.....	11,000
J. H. Rossbach & Bros.....	2,500

APRIL 7.—By the *El Mar*=Galveston:

Continental-Mexican Rubber Co.....	*265,000
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APRIL 8.—By the *Panama*=Colon:

Piza Nephews Co.....	4,000
G. Amsinck & Co.....	1,000
Mecke & Co.....	1,000
American Trading Co.....	1,000
Wessels, Kulemkamp Co.....	1,000
Brandon & Bros.....	1,000

APRIL 9.—By the *El Dorado*=New Orleans:

A. T. Morse & Co.....	3,000
Manhattan Rubber Mfg. Co.,	1,500
A. N. Rotholz.....	1,000

APRIL 9.—By the *Prins Frederick*=Colombia:

Kunhardt & Co.....	7,000
Maitland, Coppell & Co.....	4,000
J. A. Pauli & Co.....	2,000
Roldau & Van Sickle.....	1,000

APRIL 10.—By the *Esperanza*=Frontera:

Harburger & Stack.....	7,000
E. Steiger & Co.....	7,000
General Export & Com. Co.,	3,000
E. N. Tibbals & Co.....	2,000
H. Marquardt & Co.....	2,000
A. Rosenthal Sons.....	1,000

APRIL 12.—By the *Yumuri*=Tampico:

Ed. Maurer.....	*85,000
Poel & Arnold.....	*15,000
For Akron, Ohio.....	*40,000

APRIL 13.—By the *Georgic*=Liverpool:

A. Hirsch & Co.....	17,500
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APRIL 12.—By the *El Sud*=Galveston:

Cont.-Mexican Rubber Co....	*110,000
For Canada	*9,000

APRIL 14.—By the *Magdalena*=Colombia:

Kunhardt & Co.....	3,500
West Coast Rubber Co.....	1,000
Eggers & Heinlein.....	1,500

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APRIL 15.—By the <i>Sarnia</i> —Greytown:		APRIL 7.—By the <i>Zeeland</i> —Antwerp:		APRIL 13.—By the <i>Minnehaha</i> —London:	
G. Amsinck & Co.	11,500	A. T. Morse & Co.	22,500	A. T. Morse & Co.	*4,500
Jose Julia & Co.	3,500	Robinson & Co.	4,500		
J. S. Sambrade.	1,000				
	16,000		27,000		
APRIL 15.—By the <i>Advance</i> —Colon:		APRIL 8.—By the <i>Cleveland</i> —Hamburg:		APRIL 13.—By the <i>Kroonland</i> —Antwerp:	
G. Amsinck & Co.	4,000	General Rubber Co.	22,500	Poel & Arnold.	*5,500
A. Rosenthal's Sons.	4,500	George A. Alden & Co.	13,500		
A. Santos & Co.	4,000	Poel & Arnold.	13,500		
L. Johnson & Co.	3,500	A. T. Morse & Co.	6,500		
Demarest Bros.	3,500	Livesey & Co.	6,500		
Roldau & Van Sickle.	1,000	Rubber Trading Co.	3,500		
Pablo Calvet Co.	1,000				
M. Blanche Co.	1,000				
Piza Nephews Co.	1,500				
Eggers & Heinlein.	1,500				
Fidanque Bros.	1,000				
H. Marquardt & Co.	1,000				
	27,500				
APRIL 17.—By the <i>Merida</i> —Mexico:		APRIL 8.—By the <i>Caronia</i> —Liverpool:		APRIL 16.—By the <i>Atholl</i> —Singapore:	
W. L. Wadleigh.	2,500	George A. Alden & Co.	23,000	Otto Isenstein & Co.	15,000
Graham Hinkley & Co.	2,500	Robinson & Co.	7,000	Heabler & Co.	5,500
Harburger & Stack.	1,500	H. A. Gould Co.	5,000		20,500
H. Marquardt & Co.	1,000				
	7,500				
APRIL 19.—By the <i>El Dia</i> —Galveston:		APRIL 10.—By the <i>Provence</i> —Havre:		APRIL 20.—By the <i>Minneapolis</i> —London:	
Cont-Mexican Rubber Co.	*100,000	George A. Alden & Co.	11,000	Poel & Arnold.	5,500
For Canada, etc.	*25,000			Robinson & Co.	3,500
	*125,000			George A. Alden & Co.	50,000
APRIL 19.—By the <i>Momms</i> —New Orleans:		APRIL 13.—By the <i>Georgic</i> —Liverpool:		GUTTA-JELUTONG.	
A. N. Rotholz.	2,000	Poel & Arnold.	44,500	MARCH 25.—By the <i>Muncaster</i> —Singapore:	
Manhattan Rubber Mfg. Co.	1,000	George A. Alden & Co.	6,000	George A. Alden & Co.	315,000
	3,000			Heabler & Co.	155,000
APRIL 20.—By the <i>Tintoretto</i> —Bahia:		APRIL 13.—By the <i>Kroonland</i> —Antwerp:		Poel & Arnold.	155,000
A. Hirsch & Co.	2,500	George A. Alden & Co.	70,000	W. L. Gough Co.	110,000
J. H. Rossbach & Bros.	22,500	A. T. Morse & Co.	45,000	D. A. Shaw & Co.	110,000
	25,000	Rubber Trading Co.	7,000		845,000
APRIL 21.—By the <i>Allianca</i> —Colon:		W. H. Stiles & Co.	6,500		
Brandon & Bros.	5,500				
J. S. Sambrade.	4,000				
A. Santos & Co.	4,000				
Lazord Freres.	5,500				
G. Amsinck & Co.	3,000				
Wessels, Kulemkamp Co.	1,500				
Mecke & Co.	1,500				
Luzarte & Whitney.	1,500				
United Fruit Co.	1,000				
A. M. Capen's Sons.	1,000				
	28,500				
AFRICAN.		APRIL 15.—By the <i>Toutoni</i> —Bordeaux:		APRIL 6.—By the <i>Aragonia</i> —Singapore:	
MARCH 25.—By the <i>Gothland</i> —Antwerp:		General Rubber Co.	56,000	Heabler & Co.	500,000
W. H. Stiles & Co.	11,500			George A. Alden & Co.	155,000
MARCH 27.—By the <i>Patricia</i> —Hamburg:				Poel & Arnold.	90,000
Livesey & Co.	20,000				745,000
George A. Alden & Co.	12,000				
	32,000				
MARCH 31.—By the <i>Mezaba</i> —London:		APRIL 16.—By the <i>President Grant</i> —Hamburg:		GUTTA-PERCHA.	
Robinson & Co.	5,500	Poel & Arnold.	15,500	MARCH 25.—By the <i>Muncaster</i> —Singapore:	
Rubber Import Co.	2,500	W. L. Gough Co.	11,500	Otto Isenstein & Co.	15,000
	5,500	General Rubber Co.	4,500	George A. Alden & Co.	11,500
APRIL 2.—By the <i>Atlantic</i> —Liverpool:		Traun Rubber Co.	4,500		26,500
Poel & Arnold.	67,000				
Livesey & Co.	5,500				
Earle Brothers.	9,000				
A. T. Morse & Co.	4,500				
	86,000				
APRIL 3.—By the <i>Thorley</i> —Lisbon:		APRIL 17.—By the <i>Auguste Victoria</i> —Hamburg:			
General Rubber Co.	112,000	General Rubber Co.	22,500		
		George A. Alden & Co.	13,500		
APRIL 3.—By the <i>Lorraine</i> —Havre:					
Geo. A. Alden & Co.	22,500				
APRIL 5.—By the <i>Celtic</i> —Liverpool:		APRIL 19.—By the <i>Baltic</i> —Liverpool:			
Robinson & Co.	12,500	George A. Alden & Co.	35,000		
Poel & Arnold.	9,000				
George A. Alden & Co.	7,000				
Livesey & Co.	7,000				
	35,500				
APRIL 5.—By the <i>Artemisa</i> —Hamburg:		APRIL 19.—By the <i>Fert</i> —Lisbon:			
Livesey & Co.	20,000	Poel & Arnold.	44,500		
George A. Alden & Co.	11,500				
General Rubber Co.	15,000				
Poel & Arnold.	5,500				
A. T. Morse & Co.	5,500				
	57,500				
EAST INDIAN.		APRIL 20.—By the <i>Hanz</i> —Lisbon:			
[*Denotes plantation rubber.]		General Rubber Co.	56,000		
MARCH 25.—By the <i>Muncaster</i> —Singapore:		CUSTOM HOUSE STATISTICS.			
George A. Alden & Co.	11,500	PORT OF NEW YORK—MARCH.			
Poel & Arnold.	11,500	Imports:			
W. L. Gough Co.	6,000	India-rubber	6,885,685	Pounds.	Value.
Otto Isenstein & Co.	3,000	Balata	295,848		\$5,410,985
	32,000	Gutta-percha	40,447		164,276
MARCH 26.—By the <i>Adriatic</i> —London:		Gutta-jelutong (Pontianak).	2,283,859		8,950
Poel & Arnold.	*5,500	Total	9,505,839		89,422
MARCH 26.—By the <i>Matappo</i> —Colombo:		Exports:			
A. T. Morse & Co.	*11,500	India-rubber	249,545		\$237,498
MARCH 29.—By the <i>St. Louis</i> —London:		Balata	24,308		14,843
A. T. Morse & Co.	*7,000	Reclaimed rubber	190,461		22,632
APRIL 1.—By the <i>Majestic</i> —London:		Rubber scrap imported.	778,181		\$53,174
Poel & Arnold.	*6,500				
APRIL 6.—By the <i>Aragonia</i> —Singapore:					
Heabler & Co.	18,000				
APRIL 8.—By the <i>Oceanic</i> —London:					
New York Commercial Co.	*20,000				
Poel & Arnold.	*30,000				
	*50,000				
APRIL 12.—By the <i>St. Paul</i> —London:					
A. T. Morse & Co.	*7,000				

PARA EXPORTS OF INDIA-RUBBER, MARCH, 1909 (IN KILOGRAMS).

NEW YORK.					EUROPE.				
EXPORTERS.	Fine.	Medium.	Coarse.	Cauch.	TOTAL.	Fine.	Medium.	Coarse.	TOTAL.
Gruner & Co.	113,912	19,640	67,185	62,992	263,735	160,547	44,247	46,656	357,349
R. Suarez & Co.	20,230	11,050	30,600	57,318	128,198	188,106	3,200	34,853	61,904
Adelbert H. Alden	22,440	35,970	35,970	58,410	152,810	14,615	29,900	21,555	109,204
E. Pinto Alves & Co.	19,488	2,653	40,775	16,822	79,738	34,000	67,320	101,320	159,730
J. Marques	19,488	2,653	40,775	16,822	79,738	19,720	2,380	10,130	37,770
R. O. Ahlers & Co.	2,720	1,190	25,552	20,462	42,856	5,384	58,187	106,427	169,603
Gordon & Co.	8,352	1,104	35,963	20,324	65,743	7,194	2,102	22,843	75,956
Guilh. Aug. Miranda Co.	17,170	26,730	43,900	65,574	166,150	5,236	4,540	306	25,505
Alves Braga & Co.	26,180	1,700	1,500	29,380	33,754	4,224	10,843	5,561	86,202
Pires, Teixeira & Co.	24,466	2,917	3,962	16,304	47,649	23,100	8,130	4,475	39,250
Leite & Co.	2,380	179	3,960	6,840	19,653	7,226	2,352	91	37,673
Mello & Co.	340	4,055	2,643	1,079	7,777	10,810	1,838	41	57,169
De Lagotellerie & Co.	529,100	90,050	169,799	348,147	1,137,096	349	41	19,470	9,290
Scholz, Hartje & Co.	218,475	508,018	483,843	2,488,410	869,658	4,783	8,802	13,585	28,656
Bragi, Sobr. & Co.	218,053	639,306	324,140	2,218,506	1,521,113	2,408	19,435	19,020	51,009
Sundries									
Itacoatiara, direct									
Manaos, direct									
Iquitos, direct									
Total, March	786,778	134,535	486,090	523,316	1,930,728	193,071	378,918	846,180	2,462,665
Total, February	1,188,074	218,475	508,018	483,843	2,488,410	202,450	405,838	615,827	2,093,773
Total, January	1,036,998	218,053	639,306	324,140	2,218,506	154,401	365,351	775,642	2,816,507

GUAYULE

Made by mechanical process only, of strictly fresh shrub.

No chemicals used.



PARRA

The recognized Standard, practically clean, containing less resin and having greater tensile strength than any other Guayule.



DURANGO

Prepared from high grade "Parra" Guayule, guaranteed uniform, washed and dried, ready for use. Vulcanizes easily without special compounding.

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OR MONTHLY DELIVERIES

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97 Water St., NEW YORK

Sole Representative of the MADERO interests in Mexico,
Largest Producers of Guayule Rubber, Operating Nine Factories.

APRIL 15.—By the <i>Sarnia</i> =Greytown:		POUNDS.		APRIL 7.—By the <i>Zeeland</i> =Antwerp:		POUNDS.		APRIL 13.—By the <i>Minnehaha</i> =London:		POUNDS.		
G. Amsinck & Co.	11,500			A. T. Morse & Co.	22,500			A. T. Morse & Co.	4,500			
Jose Julia & Co.	3,500			Robinson & Co.	4,500		27,000					
J. S. Sambrade.	1,000	16,000										
APRIL 15.—By the <i>Advance</i> =Colon:		POUNDS.		APRIL 8.—By the <i>Cleveland</i> =Hamburg:		POUNDS.		APRIL 13.—By the <i>Kroonland</i> =Antwerp:		POUNDS.		
G. Amsinck & Co.	4,000			General Rubber Co.	22,500			Poel & Arnold.	5,500			
A. Rosenthal's Sons.	4,500			George A. Alden & Co.	13,500							
A. Santos & Co.	4,000			Poel & Arnold.	13,500							
L. Johnson & Co.	3,500			A. T. Morse & Co.	6,500			Otto Isenstein & Co.	15,000	20,500		
Demarest Bros.	3,500			Livesey & Co.	6,500			Heabler & Co.	5,500			
Roldau & Van Sickle.	1,000			Rubber Trading Co.	3,500	66,000						
Pablo Calvet Co.	1,000											
M. Blanco & Co.	1,000			APRIL 8.—By the <i>Caronia</i> =Liverpool:		POUNDS.		Poel & Arnold.	5,500			
Piza Nephews Co.	1,500			George A. Alden & Co.	23,000			Robinson & Co.	3,500	9,000		
Eggers & Heinlein.	1,500			Robinson & Co.	7,000			George A. Alden & Co.	50,000	59,000		
Fidanque Bros.	1,000			H. A. Gould Co.	5,000	35,000						
H. Marquardt & Co.	1,000	27,500						GUTTA-JELUTONG.				
APRIL 17.—By the <i>Merida</i> =Mexico:		POUNDS.		APRIL 10.—By the <i>Provence</i> =Havre:		POUNDS.		MARCH 25.—By the <i>Muncaster</i> =Singapore:		POUNDS.		
W. L. Wadleigh.	2,500			George A. Alden & Co.	11,000			George A. Alden & Co.	315,000			
Graham Hinkley & Co.	2,500							Heabler & Co.	155,000			
Harburger & Stack.	1,500			APRIL 13.—By the <i>Georgic</i> =Liverpool:		POUNDS.		Poel & Arnold.	155,000			
H. Marquardt & Co.	1,000	7,500		Poel & Arnold.	44,500			W. L. Gough Co.	110,000			
				George A. Alden & Co.	6,000	50,500		D. A. Shaw & Co.	110,000	845,000		
APRIL 19.—By <i>El Dia</i> =Galveston:		POUNDS.		APRIL 13.—By the <i>Kroonland</i> =Antwerp:		POUNDS.		APRIL 6.—By the <i>Aragonia</i> =Singapore:		POUNDS.		
Cont-Mexican Rubber Co.	100,000			George A. Alden & Co.	70,000			Heabler & Co.	500,000			
For Canada, etc.	25,000	125,000		A. T. Morse & Co.	45,000			George A. Alden & Co.	155,000			
				Rubber Trading Co.	7,000			Poel & Arnold.	90,000	745,000		
APRIL 19.—By the <i>Momus</i> =New Orleans:		POUNDS.		W. H. Stiles & Co.	6,500	128,500						
A. N. Rotholz.	2,000			APRIL 15.—By the <i>Teutonic</i> =Bordeaux:		POUNDS.		APRIL 16.—By the <i>Atholl</i> =Singapore:		POUNDS.		
Manhattan Rubber Mfg. Co.	1,000	3,000		General Rubber Co.	56,000			Heabler & Co.	225,000			
APRIL 20.—By the <i>Tintoretto</i> =Bahia:		POUNDS.		APRIL 16.—By the <i>President Grant</i> =Hamburg:		POUNDS.		George A. Alden & Co.	90,000			
A. Hirsch & Co.	2,500			Poel & Arnold.	15,500			Poel & Arnold.	90,000	405,000		
J. H. Rosbach & Bros.	22,500	25,000		W. L. Gough Co.	11,500			GUTTA-PERCHA.				
				General Rubber Co.	4,500			MARCH 25.—By the <i>Muncaster</i> =Singapore:		POUNDS.		
APRIL 21.—By the <i>Alliance</i> =Colon:		POUNDS.		Traun Rubber Co.	4,500	36,000		George A. Alden & Co.	11,500	26,500		
Brandon & Bros.	5,500			APRIL 17.—By the <i>Auguste Victoria</i> =Hamburg:		POUNDS.		APRIL 6.—By the <i>Aragonia</i> =Singapore:		POUNDS.		
J. S. Sambrade.	4,000			General Rubber Co.	22,500			Heabler & Co.	22,500			
A. Santos & Co.	4,000			George A. Alden & Co.	13,500	36,000		George A. Alden & Co.	22,000	44,500		
Lazord Freres	5,500			APRIL 19.—By the <i>Baltic</i> =Liverpool:		POUNDS.		APRIL 16.—By the <i>President Grant</i> =Hamburg:		POUNDS.		
G. Amsinck & Co.	3,000			George A. Alden & Co.	35,000			E. Oppenheim	13,500			
G. Wessels, Kulemkamp Co.	1,500			APRIL 19.—By the <i>Albano</i> =Hamburg:		POUNDS.		BALATA.				
Mecke & Co.	1,500			W. L. Gough Co.	30,000			MARCH 29.—By the <i>Maracas</i> =Bolivar:				
Luzarte & Whitney	1,500			APRIL 19.—By the <i>Fert</i> =Lisbon:		POUNDS.		C. Tennant Sons & Co.	3,500			
United Fruit Co.	1,000			Poel & Arnold.	44,500			Frame & Co.	1,000	4,500		
A. M. Capen's Sons.	1,000	28,500		APRIL 20.—By the <i>Hans</i> =Lisbon:		POUNDS.		APRIL 6.—By the <i>Coppename</i> =Demerara:		POUNDS.		
				General Rubber Co.	56,000			Frame & Co.	7,000			
AFRICAN.				EAST INDIAN.				Middleton & Co.	2,500	9,500		
MARCH 25.—By the <i>Gothland</i> =Antwerp:		POUNDS.		[*Denotes plantation rubber.]				APRIL 7.—By the <i>Maravat</i> =Bolivar:		POUNDS.		
W. H. Stiles & Co.	11,500			MARCH 25.—By the <i>Muncaster</i> =Singapore:		POUNDS.		C. Tennant Sons & Co.	8,000			
MARCH 27.—By the <i>Patricia</i> =Hamburg:		POUNDS.		George A. Alden & Co.	11,500			G. Amsinck & Co.	9,000			
Livesey & Co.	20,000			Poel & Arnold.	11,500			J. A. Pauli & Co.	5,500			
George A. Alden & Co.	12,000	32,000		W. L. Gough Co.	6,000			Frame & Co.	3,500	26,000		
MARCH 31.—By the <i>Mesaba</i> =London:		POUNDS.		Otto Isenstein & Co.	3,000	32,000		APRIL 12.—By the <i>Rotterdam</i> =Rotterdam:		POUNDS.		
Robinson & Co.	3,000			MARCH 26.—By the <i>Adriatic</i> =London:		POUNDS.		Earle Bros.	7,000			
Rubber Import Co.	2,500	5,500		Poel & Arnold.	5,500			APRIL 20.—By the <i>Surinam</i> =Demerara:		POUNDS.		
APRIL 2.—By the <i>Atlantic</i> =Liverpool:		POUNDS.		MARCH 26.—By the <i>Matappo</i> =Colombo:		POUNDS.		B. Williamson & Co.	2,500			
Poel & Arnold.	67,000			A. T. Morse & Co.	11,500			CUSTOM HOUSE STATISTICS.				
Livesey & Co.	5,500			MARCH 29.—By the <i>St. Louis</i> =London:		POUNDS.		PORT OF NEW YORK—MARCH.				
Earle Brothers	9,000			A. T. Morse & Co.	7,000			Imports:		Pounds.	Value.	
A. T. Morse & Co.	4,500	86,000		APRIL 1.—By the <i>Majestic</i> =London:		POUNDS.		India-rubber	6,885,685	\$5,410,985		
APRIL 3.—By the <i>Thorntley</i> =Lisbon:		POUNDS.		Poel & Arnold.	6,500			Balata	295,848	164,276		
General Rubber Co.	112,000			APRIL 6.—By the <i>Aragonia</i> =Singapore:		POUNDS.		Gutta-percha	40,447	8,950		
APRIL 3.—By the <i>Lorraine</i> =Havre:		POUNDS.		Heabler & Co.	18,000			Gutta-jelutong (Pontianak).	2,283,859	89,422		
Geo. A. Alden & Co.	22,500			APRIL 8.—By the <i>Oceanic</i> =London:		POUNDS.		Total	9,505,839	\$5,673,633		
APRIL 5.—By the <i>Celtic</i> =Liverpool:		POUNDS.		New York Commercial Co.	20,000			Exports:				
Robinson & Co.	12,500			Poel & Arnold.	30,000	50,000		India-rubber	249,545	\$237,492		
Poel & Arnold.	9,000			APRIL 12.—By the <i>St. Paul</i> =London:		POUNDS.		Balata	24,308	14,843		
George A. Alden & Co.	7,000			A. T. Morse & Co.	7,000			Reclaimed rubber	190,461	22,632		
Livesey & Co.	7,000	35,500		PARA EXPORTS OF INDIA-RUBBER, MARCH, 1909 (IN KILOGRAMS).				Rubber scrap imported.	778,181	\$53,174		
APRIL 5.—By the <i>Artemisa</i> =Hamburg:		POUNDS.		NEW YORK.								
Livesey & Co.	20,000			EXPORTERS.	Fine.	Medium.	Coarse.	Cauch.	TOTAL.	Fine.	Medium.	
George A. Alden & Co.	11,500			Gruner & Co.	113,912	19,649	67,185	62,992	263,735	160,547	44,247	
General Rubber Co.	15,000			R. Suarez & Co.	20,230	11,050	39,600	57,318	128,198	188,106	39,420	
Poel & Arnold.	5,500			Adelbert H. Alden	22,440	35,970	35,970	58,410	128,198	43,164	19,435	
A. T. Morse & Co.	5,500	57,500		E. Pinto Alves & Co.	19,488	2,653	40,775	20,462	47,649	10,146	2,380	
				G. O. Ahlers & Co.	8,352	1,104	35,993	20,324	65,743	16,150	2,330	
				Gordon & Co.	2,720	1,190	25,552	20,462	47,649	43,817	7,194	
				Guilh. Aug. Miranda Co.	8,352	1,104	35,993	20,324	65,743	16,150	2,330	
				Alves Braga & Co.	17,170	1,700	1,500	1,079	7,777	33,754	10,810	
				Sundries	340	340	340	340	7,777	2,745	2,745	
				Itacoatiara, direct	529,100	529,100	529,100	529,100	1,521,113	88,816	393,049	
				Manaos, direct	529,100	529,100	529,100	529,100	1,521,113	12,203	154,467	
				Iquitos, direct	529,100	529,100	529,100	529,100	1,521,113	2,745	2,745	
				Total, March	786,778	134,535	486,099	523,316	1,930,728	1,044,496	193,071	
				Total, February	1,188,074	218,475	508,018	493,843	2,488,410	809,658	202,450	
				Total, January	1,036,998	218,053	639,306	324,149	2,218,506	1,521,113	154,401	

PARA EXPORTS OF INDIA-RUBBER, MARCH, 1909 (IN KILOGRAMS).

NEW YORK.					EUROPE.					TOTAL.		
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Vol. 40.

MAY 1, 1909.

No. 2.

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Antwerp.

RUBBER STATISTICS FOR MARCH.

DETAILS.	1909.	1908.	1907.	1906.	1905.
Stocks, Feb. 29.....kilos	331,433	907,104	603,861	614,688	557,400
Arrivals in March ..	544,126	692,398	416,734	659,562	334,000
Congo sorts	410,838	587,972	358,496	521,264	266,097
Other sorts	133,288	104,426	58,238	138,298	67,903
Aggregating	875,559	1,599,502	1,020,595	1,274,250	891,400
Sales in March	279,704	462,610	295,057	632,600	567,455
Stocks, March 31....	595,855	1,136,892	725,538	641,650	323,945
Arrivals since Jan. 1.	1,128,092	1,517,809	1,332,758	1,679,490	1,281,027
Congo sorts	781,387	1,347,423	1,151,165	1,274,782	1,002,124
Other sorts	346,705	170,386	181,593	404,708	278,903
Sales since Jan. 1....	1,127,972	1,387,811	1,265,404	1,273,027	1,498,443

Antwerp.

RUBBER ARRIVALS FROM THE CONGO.

MARCH 22.—By the steamer *Leopoldville*:

Bunge & Co.....	(Société Générale Africaine) kilos	82,000
Do	(Chemins de fer Grands Lacs)	7,000
Do	(Comité Spécial Katanga)	800
Do	(Société Abir)	4,400
Do	(Société Anversoise)	1,400
Do	(Comptoir Commercial Congolais)	500
Société Coloniale Anversoise.....	(Belge du Haut Congo)	2,800
Do	(Cie. du Kasai)	135,300
Do	(Sud Cameroen)	16,500
L. & W. Van de Velde.....		3,000
Charles Dethier	(American Congo Co.)	2,000
G. & C. Kreglinger	(Lobay)	4,000
Cassart & Henrion		1,500 262,100

APRIL 13.—By the steamer *Bruxellesville*:

Bunge & Co.....	(Société Générale Africaine) kilos	85,700
Do	(Société ABIR)	5,500
Do	(Comptoir Commercial Congolais)	24,000
Do	(Société Anversoise)	1,100
Do	(Chemins de fer Grands Lacs)	8,300
Société Coloniale Anversoise.....	(Belge du Haut Congo)	17,600
L. & W. de Velde	(Cie du Kasai)	98,000
Do		6,000 246,200

London.

GEORGE WHITE & Co., a large brokerage firm of Fenchurch street, London, and Colombo, have established a crude rubber department with the assistance of Mr. Bryan E. Figgis, late of William Symington & Co., Limited, the European representatives of the General Rubber Co. (New York), who are very large American buyers.

Liverpool.

WILLIAM WRIGHT & Co. report [April 1]:

Fine Pará.—The spot market has been firm, owing to a shortage for this month's deliveries. The forward positions have declined fully 2d. per pound, owing to poor demand both here and in the States. American manufacturers are said to be fully stocked, which, if true, will have its due effect on prices. Trade in America is reported dull, probably partly owing to tariff revision. Whether the anticipated "boom" will take place after the settlement of the tariff remains to be seen, but we venture to think that the demands of the motor industry will prevent any "slump" in values.

United States Rubber Co.'s Shares.

TRANSACTIONS ON THE NEW YORK STOCK EXCHANGE FOR NINE WEEKS, ENDING APRIL 24:

COMMON STOCK.

COMMON STOCK.							
Week	Feb. 27	Sales	2,400 shares	High	29 $\frac{3}{4}$	Low	27
Week	Mar. 6	Sales	330 shares	High	30	Low	29 $\frac{1}{2}$
Week	Mar. 13	Sales	100 shares	High	29 $\frac{1}{8}$	Low	29 $\frac{1}{4}$
Week	Mar. 20	Sales	200 shares	High	30	Low	29 $\frac{1}{4}$
Week	Mar. 27	Sales	— shares	High	—	Low	—
Week	April 3	Sales	3,400 shares	High	33	Low	30 $\frac{1}{4}$
Week	April 10	Sales	1,610 shares	High	31 $\frac{1}{2}$	Low	31
Week	April 17	Sales	6,400 shares	High	33 $\frac{1}{4}$	Low	31 $\frac{1}{4}$
Week	April 24	Sales	7,825 shares	High	35	Low	32 $\frac{5}{8}$

For the year—High, 35, April 20; Low, 27, Feb. 24.

Last year—High, 37 1/2; Low, 17 1/2.

FIRST PREFERRED STOCK.

Week	Feb. 27	Sales	3,293 shares	High	102 1/2	Low	100
Week	Mar. 6	Sales	750 shares	High	103	Low	102
Week	Mar. 13	Sales	500 shares	High	103	Low	102 1/4
Week	Mar. 20	Sales	610 shares	High	103 1/2	Low	103 1/8
Week	Mar. 27	Sales	1,020 shares	High	104	Low	103 1/4
Week	April 3	Sales	4,736 shares	High	104 1/2	Low	103 1/2
Week	April 10	Sales	2,425 shares	High	105 1/2	Low	104
Week	April 17	Sales	6,750 shares	High	105 7/8	Low	102 1/4
Week	April 24	Sales	3,463 shares	High	104 7/8	Low	103 1/2

For the year—High, 107, Jan. 12; Low, 98, Jan. 29.

Last year—High, 108; Low, 76.

SECOND PREFERRED STOCK.

Week	Feb. 27	Sales	110 shares	High	67 1/2	Low	67 1/4
Week	Mar. 6	Sales	— shares	High	—	Low	—
Week	Mar. 13	Sales	— shares	High	—	Low	—
Week	Mar. 20	Sales	100 shares	High	69	Low	69
Week	Mar. 27	Sales	— shares	High	—	Low	—
Week	April 3	Sales	1,010 shares	High	70 7/8	Low	70
Week	April 10	Sales	900 shares	High	72	Low	70 3/4
Week	April 17	Sales	1,324 shares	High	72	Low	70 1/4
Week	April 24	Sales	150 shares	High	68 1/4	Low	68 1/4

For the year—High, 73 1/4, Jan. 5; Low, 67 1/2, Feb. 25.

Last year—High, 75 1/2; Low, 42.

